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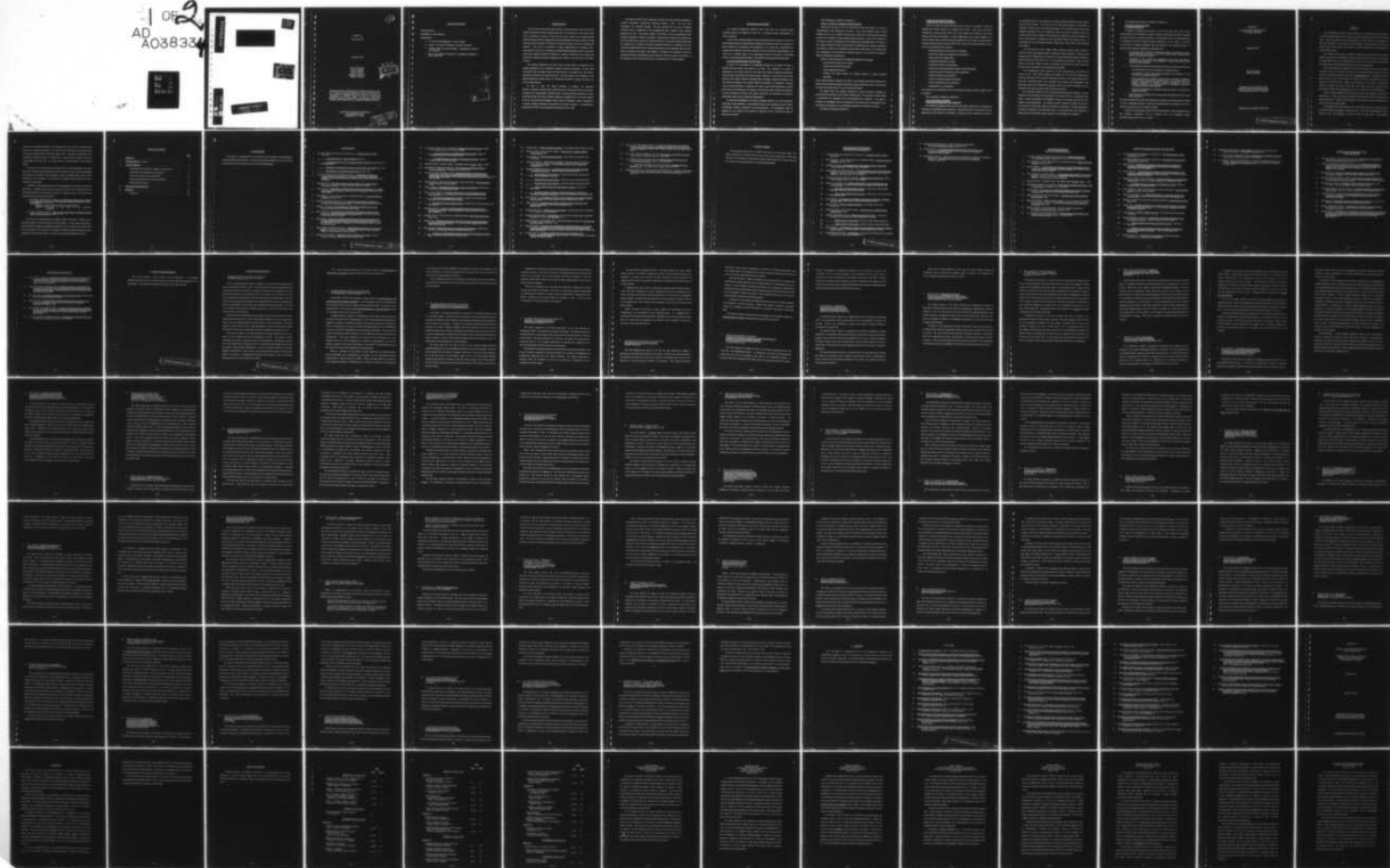
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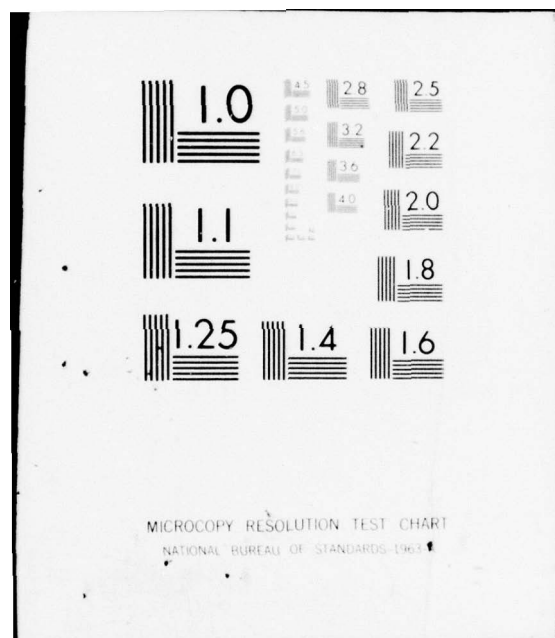
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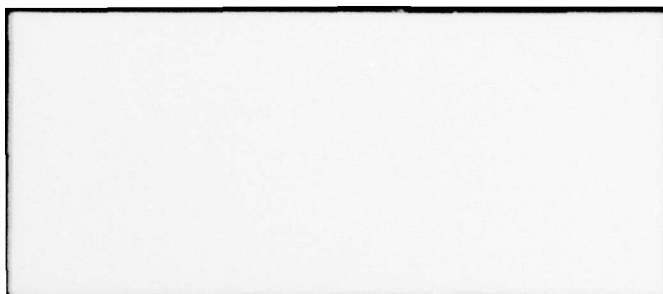
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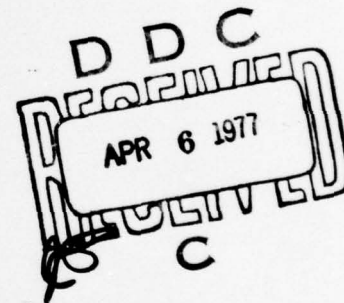
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PROFIT '76

(LMI Task 76-3)

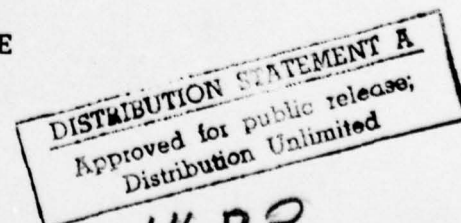
December 1976

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## INTRODUCTION

For the past several years there has been a growing concern within the Defense Department about the effect its profit policy has on DoD contractors. This concern stems from a combination of factors. Faced with the need to acquire more complex defense systems during a period of rising prices, the DoD has searched for ways to reduce the high production costs of systems. Of course, DoD contractors play a key role in attaining this objective. They must be motivated to exploit opportunities for reducing costs—opportunities to invest in new facilities to replace obsolete equipment and/or to eliminate costly labor intensive methods of production. However, contractors do not make such investments unless they generate adequate profit relative to the risk and other factors involved.

The Defense Department was aware that its profit policy, as reflected by the weighted guidelines, did not explicitly recognize contractor investment. In fact, there was concern that the policy, which was based heavily on estimated cost, may tend to discourage investment and reward high cost. The DoD became more sensitive to this possible deficiency in profit policy as it intensified its efforts to counter the rise in the cost of weapon systems.

On May 13, 1975, the Deputy Secretary of Defense, the Honorable William P. Clements, directed that a full-scale study of DoD profit policy be initiated. The goal was to develop policy revisions needed to motivate defense contractors to make investments which will reduce Defense Department acquisition cost. The study, entitled Profit '76, was directed by Brigadier General James W. Stansberry, under the supervision of Deputy Assistant Secretary (Procurement) Mr. Dale R. Babione. A comprehensive study plan for Profit '76 was developed and published in June, 1975.



The results of Profit '76 are reflected in the new DoD Profit Policy promulgated in Defense Procurement Circular 76--3 effective October 1, 1976. The new policy incorporates two important changes. The first provides that the level of facilities investment will be recognized in the pre-negotiation profit objective where weighted guidelines are used. The relative weight of this factor in the pre-negotiation profit objective calculation is modest; in the future, it likely will be increased after industry has had some opportunity to adjust its investment patterns. The second change provides that the imputed cost of capital for facility investment (measured in accordance with Cost Accounting Standard 414) will be considered allowable on most negotiated DoD contracts which are priced on the basis of cost analysis. Procedures are established so that the contracting officer's pre-negotiation profit objective takes into account and offsets, on the average, the cost increase attributable to the imputed cost of facility capital.

## SYNOPSIS OF LMI SUPPORT

The Logistics Management Institute, under Task Order 76-3, provided overall technical guidance and support for Profit '76. It assumed primary responsibility for research planning.

As part of its technical support, LMI worked closely with the Director of Profit '76 and developed products to satisfy specific requirements during the course of the study. Its effort included the development and publication of the study plan, identification of financial data elements which were collected from the contractors participating in the study, and a technical review of the questionnaire used in the survey of contracting officers. To provide additional support, LMI produced the documents described below.

### An Annotated Bibliography of Profit Studies

As part of the development of background material for the Profit '76 Study, a detailed literature search was carried out by LMI. This consisted of a review of publications of the period 1965-1975 that dealt with defense contractor profitability, contract policy and practice, and related issues. Serving as a core for this review were studies by LMI, RAND, General Accounting Office, Aerospace Industries Association, and Prof. Murray Weidenbaum that directly address the question of profitability in defense versus commercial business. In addition, the review covered many publications on related topics, such as commentary on the validity of other profit studies; theoretical discussions of profit, contractor motivation, and capital investment; and discussions of contractor performance under various contractual arrangements.

An annotated bibliography was written, providing indexes to and brief descriptive summaries of the publications. The summaries include, where applicable, sources of data, methodology, findings, conclusions and recommendations. The bibliography makes no judgment as to the validity of any position or argument; rather, it presents the issues as stated by the authors.

The bibliography is included as Appendix A.

Digest: Tax Reform Hearings on Capital Formation

During June and July of 1975 the Committee on Ways and Means, U. S. House of Representatives, held hearings on tax reform. One of the important issues of those hearings was the rate of capital formation and whether the tax laws provided adequate incentive for companies to acquire needed capital investment. Much of the testimony on this subject by expert witnesses and private groups and individuals dealt with whether or not a capital shortfall was likely, and how such a shortfall could be avoided by appropriate tax incentives. Since it was important for the Profit '76 study team to take these topics into consideration, LMI reviewed all testimony pertinent to the study and prepared a digest summarizing the major points.

Several recommendations recur frequently throughout the hearings;

- shorten period of capital cost recovery
- increase the Investment Tax Credit
- reduce capital gains taxation
- eliminate the double taxation of corporate income by making dividends deductible

These recommendations represent the views of most industry spokesmen, although some special interest groups and private individuals expressed differing views on the direction that tax reform should take in the area of capital formation.

The digest covers the principal testimony on capital formation, including two presentations by Secretary of the Treasury William Simon. The testimony of each witness is summarized and conclusions and recommendations are identified. The digest is arranged in chronological order and referenced to the actual texts of testimonies so that more specific information on any individual's presentation can readily be obtained.

The digest is included as Appendix B.



Defense Profits and Profit Studies:  
Congressional Criticism and Concerns

During the past few years there have been a number of instances in which the Congress has focused attention on Defense Profit Policy. These have occurred in Congressional hearings during which there were remarks and criticisms made about defense profits and profit studies. To make Congressional views readily available to the Profit '76 Study Group, LMI identified and classified the most frequent comments made in hearings conducted during the period 1968 to 1975. Most of the comments relate to one or more of the following areas of concern:

- defense industry profit information is inadequate
- prior profit studies are unreliable and contradictory
- defense profits are being hidden
- meaningful competition is needed
- defense profits have been increasing
- government-furnished equipment results in unfair advantages
- contractor capital investment should be emphasized
- defense contractors are inefficient
- uniform accounting standards are needed
- Truth-in-Negotiations Act is ineffective
- Renegotiation Act is ineffective

The comments are summarized, as well as indexed, according to source, subject matter and speaker.

This compilation is included in Appendix C.

Use of the Weighted Guidelines  
in Establishing Negotiation Profit Objectives

The Weighted Guidelines (WGL) provide contracting officers with a rationale and technique for establishing profit objectives. Approximately 60% of the DoD's total pre-negotiation profit objective is attributable to contractor effort measured by the cost of



the contractors' input to total performance (CITP), commonly referred to as the "above-the-line" profit factors. This portion of the total profit objective is developed by application of profit rates, within prescribed ranges, to the estimated costs for the various categories associated with the contractors' effort (e.g., direct materials, labor, and overhead costs). Since a change in DoD profit policy would likely result in a change to the WGL, LMI was asked to examine how the contracting officers were using the WGL. In conducting this study, 535 pricing actions, totaling more than \$6 billion, were collected and analyzed.

The above-the-line profit weight ranges inherently provide higher profits on contracts which utilize higher amounts of contractor capital investment. However, DoD negotiators more frequently select values above the authorized profit range mid-points for direct material cost than they do for the value added cost elements. Thus, in actual practice, less profit weight is given to contractor investment than would result from merely using the mid-points of the authorized profit ranges.

The pre-negotiation profit objectives on total above-the-line costs (CITP) are inverse to risk. CITP profit objectives are higher for low risk cost reimbursement contracts than they are for high-risk fixed-price contracts. This results because of the high profit engineering effort most associated with research and development work performed under cost reimbursement contracts, and the low profit materials cost most associated with production effort under fixed-price contracts.

The study also revealed that the average above-the-line profit objective for each category of cost generally was concentrated in the upper half of the prescribed profit range. Among the individual cost categories, however, the average profit rate for each category varied significantly. This variation makes it difficult to predict the effect of any adjustment of the profit ranges for individual cost categories. Whereas adjusting the total profit computed on the contractors' input to total performance cost would have a minimal effect on the profit objective assigned to the individual cost categories.

The complete study results are reported in Appendix D.

The Defense Industry—Financial  
Community Perspectives

To support its analysis and provide the DoD Profit Study Team with a better understanding of the availability of capital to defense contractors, LMI found it necessary to obtain the views of financial institutions. LMI contracted with The Conference Board, an independent non-profit business research organization, to do a survey. A total of 56 executives of financial institutions were interviewed by The Conference Board. In general, those executives expressed the following views:

1. As compared with the profits of industries oriented to commercial markets, defense-contractor profits are too low for the risks defense contractors face and for their long-term viability.
2. Uncertainty is the principal risk perceived by the survey participants—uncertainty pertaining both to the fulfillment of present contracts and the winning of future contracts.
3. Other negatives associated with defense contractors by those surveyed include:
  - Limited product lines and over-reliance on a single customer.
  - Past behavior of some contractors—specifically, their propensity to "buy in," and poor management practices.
  - Certain Department of Defense (DoD) policies, procurement regulations and tactics, and administrative practices that have untoward effects on defense contractors—for example, excessive management and policy changes, a propensity to alter specifications in mid-contract, adoption of an adversary posture toward suppliers.
  - The perhaps inevitable but nonetheless deplorable injection of politics into defense contracting.
4. Subcontractors are thought to be in more parlous circumstances than the major prime contractors.

The study concluded that unless these problems are reduced, the defense industry is likely to find it increasingly difficult to secure the financing required, especially if the U. S. economy encounters a severe shortage of capital.

A copy of the study report, entitled "The Defense Industry: Some Perspectives from the Financial Community," may be obtained from The Conference Board, 845 Third Avenue, New York, N. Y. 10022.

**APPENDIX A**  
**AN ANNOTATED BIBLIOGRAPHY**  
**OF PROFIT STUDIES**

**September 1975**

**Otto B. Martinson**  
**Steven C. Mayer**

**Prepared for the Profit Study Group**  
**Profit '76, Office of Assistant Secretary**  
**of Defense (Installations and Logistics)**

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## PREFACE

This bibliography is a review of past studies in the area of defense industry profits. It has been designed specifically to serve as an informational base for the Profit '76 Study effort. During the process of selecting publications, several subject areas emerged, and have been reflected in the indexing of this bibliography. These subjects did not serve as specific search areas, rather, they represent a natural distribution of the publications around certain themes.

Over the past ten years only a handful of studies have been conducted that directly address the question of profitability in defense versus commercial business. The studies by LMI, RAND, GAO, AIA, and Weidenbaum form the core of authoritative information that is pertinent to this topic, and the basis for the first subject group.

Many other reports are available that deal with the subject of profits in the defense industries, but for the most part they rely on the above-mentioned studies for source material. Publications of this nature, such as Arming America by J. Ronald Fox have not been included in this review because the sections that deal with defense profits are repetitive of primary sources. Papers which comment on the validity of other profit studies, or compare the results of one study with another, have been included as they often present important and differing points of view. These make up the second group.

There is a group of papers and reports that deals with certain aspects of government contract policy. Another group presents theoretical discussions of profits, motivation, and capital investment. Finally, there are papers on the subject of contractor performance under various contracting methods.

The bibliography has been organized so as to facilitate the location of specific items and provide subject groupings for a general review. The master bibliographical index is listed by author, and designates a document number for each entry. The document

numbers are consistent throughout the bibliography, and can be used to locate specific abstracts in the annotated section. The master index is followed by five subject indices, and has been broken down into those five subject areas. The subject listing should not be considered an absolute division of topics; there is a great deal of overlap, and several papers appear more than once. It is meant only as a rough breakdown to aid in general review.

The body of the resume follows the indices, and is listed alphabetically by author. Each entry includes a brief, descriptive summary indicating sources of data, methodology, and findings and conclusions where applicable. Finally, an alphabetical listing by title is included as a cross reference. In all cases, the document number refers to the entry number in the main body.

In addition to the publications listed in this bibliography two noteworthy reports are cited below. Although these reports go beyond the scope of profit studies per se, the historical perspective and analytical treatment of important issues in the area of DoD procurement may warrant your attention.

- 1) Blue Ribbon Defense Panel. Report to the President and Secretary of Defense of the Department of Defense, U. S. Government Printing Office, July 1, 1970.  
In particular:  
Appendix E "Major Weapon Systems Acquisition Process"  
Appendix L "Comparisons of DoD, NASA and AEC Acquisition Processes."
- 2) Industry Advisory Council. Report of the Subcommittee to Consider Defense Industry Contract Financing, June 11, 1971.

Since most of the publications are available through NTIS, DDC, or DLSIE, the AD and/or LD numbers have been included wherever possible. In many cases a paper can be obtained directly through the publishing organization, such as, RAND, AID, or LMI. Some of the materials are on file at LMI. If assistance is needed in locating a specific article, inquiries may be directed to Steven C. Mayer at the Logistics Management Institute.

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## I. MASTER INDEX

This index is a comprehensive list of the publications reviewed in this bibliography, arranged alphabetically by author. The document numbers established in this list are used consistently in the other indices and in the Annotated Bibliography.



## MASTER INDEX

1. Aerospace Industries Association of America, Inc. Aerospace Profit vs. Risks, June 1971.
2. \_\_\_\_\_. Cost Disallowances: Causes and Effects, May 1971.
3. \_\_\_\_\_. Financial Profile of the U. S. Aerospace Industry 1960-1973, December 1974 (Working Draft).
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COMPARISONS OF PROFITABILITY:  
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### III. ANNOTATED BIBLIOGRAPHY

This section presents a brief summary of each publication. It is arranged alphabetically by author, and is indexed by author, title, and subject area elsewhere in this bibliography. The numbers are the document numbers used in all the indices.

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## ANNOTATED BIBLIOGRAPHY

1. Aerospace Industries Association of America, Inc.,  
Aerospace Profits vs. Risks, June 1971, (20 p.)

This is a well documented study of the adequacy of profits in the Aerospace Industry and the relationship of profits to risks. The study identifies three broad categories of risk: technical, structural, and financial. Ultimately, the first two are reflected in the third. Included are discussions of the nature of risk, risk on capital, how to estimate the risk to the contractor, and the sharing of risk by the contractor and the government. The study points out that while empirical evidence on the measurement of risk and its relationship to profits is not available, it is clear that risks in aerospace work have increased. This is due to an increase in the riskiness of production itself, and to a shift of the risk burden from the government to the contractor.

Profit rates are then discussed, both in relation to risks, and in comparison to other, similar industry rates of return. Data is presented for profit as a percent of sales, equity capital, and total capital invested, and the merits of each are discussed. Whichever measure is used, profit rates have fallen significantly over the four year period studied (1966-1969), and are currently below profit levels for comparable commercial activity.

AIA sees an increase in the risk associated with aerospace production work in the future, due to increased need for and complexity of R&D. Also, greater product complexity will result in increased lead times, reduced flexibility of production facilities, and a move toward fewer and larger contracts. Coupled with these changes will be a need for greater working capital requirements. It will be necessary therefore, to provide adequate risk premiums in order to insure a level of profit that will attract further equity capital to the industry. Recognizing the risk-profit relationship is critical to providing aerospace production with a proper rate of return.

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For a more thorough discussion of the risks involved, see Risk Elements in Government Contracting, Aerospace Industries Association, October 1970.

2. Aerospace Industries Association of America, Inc.,  
Cost Disallowances: Causes and Effects, May 1971

In November 1969, the AIA published a position paper on Cost Principles of the Armed Services Procurement Regulation. After subsequent review and a determination that the position was still valid, the paper was reprinted in May 1971. At this time, it was supplemented by a short paper entitled, Cost Disallowances: Causes and Effects, and the two now appear under one cover by that title.

The paper describes a condition - the disallowance under many government contracts of numerous necessary costs of doing business - which is undermining the willingness and capability of industry to provide the products and services needed by the Government. There is a discussion of the history of the Cost Principles (Section XV of the ASPR), and of the intent of the Cost Principles and the Buyer-Seller relationship. AIA draws a sharp distinction between the intent of Section IV of the ASPR and the actual climate of cost disallowances. After many additions and revisions, the Cost Principles now seem designed, and are too often interpreted, as a vehicle for disallowing any cost that can possibly be subject to some test of disallowance. This results in the disallowance of many costs which are a normal and necessary part of doing business.

There is a discussion on the evolution toward disallowance, including pressures toward disallowing costs, unallowability by inference, and the disallowance-oriented interpretations of vague wording in the ASPR. Finally, the paper explains the results of the changing interpretation of ASPR Section XV. These are, primarily, the compounding

of contractors' risk, the discouragement of government contractors and consequent shifting of resources to commercial markets, and the increased cost to both contractor and Government of administering the Principles.

AIA recommends that the Cost Principles be substantially recast and simplified to avoid practices treating Government contracting as a field different and apart from other forms of business.

3. Aerospace Industries Association of America, Inc.,  
Financial Profile of the U. S. Aerospace Industry  
1960-1973, December 1974 (Working Draft) (55 p.)

This report is a detailed description and analysis of the financial condition of the U. S. Aerospace Industry. Extensive data from the Federal Trade Commission, the Bureau of Census, the Bureau of Labor Statistics, and the AIA are incorporated in the report and form the basis for the analysis. In addition to the analysis of past and current financial conditions, the report compares aerospace financial performance with that of other industries, projects future capital requirements, and evaluates the ability of the industry to attract needed capital. Findings of other financial and profit studies by GAO, LMI, and others, as well as a survey of AIA member companies were used in addition to the raw financial data in the formulation of recommendations.

The study found that the rate of return on total capital invested has been consistently below that of all manufacturing industries over the study period. Investors' risk (as measured by the number of changes in direction in the rate of return movement over time) was found to be considerably higher than in most other high technology manufacturing industries, resulting in lower P/E ratios and higher costs of equity capital. The cost of debt capital has also been considerably higher for the aerospace industry over the past 14 years.



Replacement and expansion of obsolete fixed facilities will place heavy demands on capital in the future. Over the next ten years, it is estimated that some \$11 billion will be needed for this purpose. Due to excess capacity, the level of investment in plant and equipment should remain stable for the next few years, rising sharply in later years as excess capacity is absorbed.

The study recommends that more effective utilization of capacity be achieved through diversification and mergers. Also, the U. S. Government should encourage IR&D by recognizing such expenses as necessary costs of doing business. Finally, government policies, regulations and practices should be modified to allow a level of profit commensurate with the risks involved in the industry.

4. Aerospace Industries Association of America, Inc.,  
Monopsony: A Fundamental Problem in  
Government Procurement, May 1973.

This report, prepared by the Orkand Corporation for the AIA, discusses the monopsonistic nature of the government-industry relationship. The Federal Government, as principal buyer in a large sector of the economy (nearly 10 percent of GNP in 1973), has a great effect on pricing and allocation of resources. The impact of the government's monopsony power as a free market imperfection is examined, and a program for the reform of government dominated markets is recommended.

The problems of monopsony powers are introduced via a theoretical framework. The concept of perfect competition is discussed, followed by an analysis of monopolistic and monopsonistic departures from free market conditions. The Federal Government is examined within this framework in terms of its actions as a monopsonist and the consequences of these actions.



The government's monopsonistic power is derived primarily from three complementary sources: 1) the ability to dominate the market through volume purchases and the uniqueness of products and services; 2) market domination through procedural and regulatory powers; and 3) the inability of government-oriented firms to transfer resources to other markets.

Consequences of these powers are discussed, including excessive proposal specifications and costs; imbalances in contract negotiations; forced cost sharing; price and profit reductions; and excessive reporting requirements and restrictions on management decision making. In broader terms the question of industry viability is raised in light of low and falling profit rates. (Data for this discussion is taken from the GAO and LMI profit studies.)

Finally, the paper recommends a 5 point program for restricting the use and consequences of the monopsonistic power described above. It is suggested that a Government Procurement Practices Board be established to limit the use of governmental power, to review policies, regulations and practices, and to maintain a free market criterion for the procurement process.

5. Aerospace Industries Association of America, Inc.,  
Risk Elements in Government Contracting,  
October 1970 (48 p.)

This study highlights key areas of risk that have been affected by changes in government procurement policy during the last decade. In light of the unique environment of government contract work, these risks are peculiar to the government contractor, and determine to a great extent the viability of his business. The contractor's greatest

constraint is that he faces a monopsonist in the form of the Federal Government. This fact renders many of the traditional risk aversion techniques inoperable and creates new areas of risk which would otherwise be non-existent.

The study discusses, in separate chapters, the risks associated with: contract type, warranties and related liabilities, lack of indemnification for ultrahazardous risks, non-recovery of costs, funding, terminations, providing cost or pricing data, administrative settlement of contract breaches, facilities investment, patents and technical data, and the use of management systems and controls. After describing the nature of the risk, each chapter presents conclusions and recommendations.

A summary of the conclusions identifies the need to restore the balance between risk assumption and profit potential. Without this balance it becomes increasingly difficult for companies to justify commitment of resources to government contracting work.

For further discussion of the profit-risk relationship in the Aerospace Industry see Aerospace Profits vs. Risks, Aerospace Industries Association, June 1971

6. Ames, LCdr. Richard Earl, and Others.  
Considerations of Return on Capital Investment and Payment on Progress in the Defense Shipbuilding Industry,  
Naval Postgraduate School Thesis, June 1972  
(LD 28667) (AD 747 504).

This thesis considers the impact of return on investment, progress payments, and cash flow in the shipbuilding industry. An examination was made of both government profit policy and contract financing as they relate to the shipbuilding industry. A computer model was developed which makes explicit the discounted cash flow in a given

contract and displays all government payments to the contractor as well as the contractor's share of contract financing. The time-adjusted rate of return which is implied by the terms and conditions of the contract is computed by the model. A decision process for computing a profit negotiation position is developed which integrates (1) the industry advisory council profit computation system; (2) the proposed shipbuilding progress payment method; and (3) the prevailing market conditions.

7. Benefield, Bruce. The Use of a Capital Charge Concept in Pricing Negotiated Government Contracts, Harvard University DBA Thesis, 1968.

In determining profit objectives in negotiated contracts the present methodology used by the government relates profit solely to the cost estimated to perform the contract. Little, if any, consideration is given to the capital investment required to accomplish the contract task.

The Capital Charge Concept was designed to give specific recognition to capital requirements on negotiated contracts and to motivate contractors to acquire facilities and equipment when they find it economically feasible to do so. From a theoretical viewpoint the capital charge concept was considered to be a sound and useful approach, but from a realist point of view there were many problems perceived to be involved in its practical application.

This research focused its efforts on an identification of these problem areas through the means of an attitude survey of industry and government sources, ascertaining the relative administrative difficulties anticipated if the concept were adopted as policy by the Department of Defense.

Based upon the data gathered in this study, the capital charge concept was considered to be an administrative feasible concept to employ in the development of prices on negotiated government contracts. (Author)

8. Bennett, John J. Department of Defense Systems Acquisition Management: Congressional Criticism and Concern, Defense Systems Management School Dissertation, May 1974, (LD 32486A).

The research covered in this report addresses the Congressional oversight of Department of Defense (DoD) systems acquisition management. Specifically, the research question is: What were the major criticisms and concerns of Congress pertaining to DoD systems acquisition management during the period 1967 through 1972, and what major areas of management weakness were highlighted collectively by the committees having oversight responsibilities?

Conclusions: The Congressional oversight committees' criticisms of and concerns for DoD systems acquisition management during the period 1967 through 1972 were many and varied. The study identified approximately 700 problem elements of subproblems which were categorized into seventy major problems. These formed the basis for much of the report. There is overwhelming evidence that waste and inefficiency were widespread in DoD systems acquisition management and procurement during the period under study.



9. Bohi, Douglas R. "Profit Performance in the Defense Industry," Journal of Political Economy, May/June 1973.

The purpose of this article is to examine the profit performance of defense industry firms in the past decade to determine whether the profit rates of firms engaged in defense business differ significantly from profit rates in the commercial sector. Despite several studies in the past (by LMI, GAO, and Murray Weidenbaum) the fundamental issues are still not resolved due to the many discrepancies and the level of disagreement among the studies. The author points out that each of the studies mentioned has its shortcomings, so, in an attempt to resolve the issues, the author constructed a sample of 36 defense firms that consistently appeared on the DoD list of "Top 100 Defense Contractors," for the years 1960 through 1969. These defense firms were compared to the Fortune 500 largest manufacturers for the same time period.

A comparison of return on net worth indicates that profit performance is not significantly different between these two groups. This result supports neither the LMI, nor the Weidenbaum conclusion, but does appear consistent with the GAO study. Additional conclusions are that 1) there seems to be no relationship between the percentage of defense business and profit performance, 2) the Weidenbaum hypothesis that defense business is becoming more concentrated is not supported, and 3) if defense firms profited from the Vietnam War it is more likely that their increased profits were the result of increases in their non-defense business generated indirectly by war spending.

10. Bowers, Commander William W. Analysis of the Competitive Position of the United States Shipbuilding Industry, ICAF Thesis, March 1969, (LD 23162).

American-built ships have not been price competitive since the days of wooden ships. Is it possible to restore the competitive position of U. S. ships and if it is, what will it take? High labor costs, failure of government shipbuilding subsidies to promote efficiency, lack of cooperation between the various factions of the industry, and the adverse effects of huge wartime building programs have been the major reasons for high U. S. building costs. Recently, however, the prospect of reducing the competitive gap has improved, largely due to industry-wide U. S. plant modernization and a rise in foreign building costs, until today it is the best it has been in a century. What is needed now is a long range building program which will receive the support of all elements concerned within government, labor and industry. Such a program, containing eight major points, is recommended in this paper. (This thesis is available on interlibrary loan from the ICAF Library.)

11. Bradley, C. E., et al. An Investigation of Profit Rates in Defense Contracting, George Washington University Paper (N66-35961).

The fundamental question of government procurement will probably never be answered, i.e., are profits inadequate, sufficient, or excessive? The answer demands that an acceptable index and scale be used; neither economic theory nor ethics provides such a basis for evaluating profits. However, a measure of the cost of equity capital provides a lower limit for the required profit rate. Although the cost of capital determines how much is just enough, there is no measure to determine how much is too much.

This paper is in three parts. Part I is an examination of the cost of capital in several industry groups. Selected time series data are used to present a ratio analysis for the specific industry groups, then overall profit outcomes are evaluated in terms of an average measure of the cost of capital. The procedure is exploratory, and makes adaptations of models which capital theorists offer as descriptive of market behavior. The data base covers the years 1954-1965 and was compiled from the S.E.C. Form 10-K and other reports filed with the S.E.C. Additional data was obtained from Moody's Industrial Manuals.

Part II of the paper examines the equity financing standard for measuring the adequacy of profits. This profit renegotiation standard, developed by Jacoby and Weston, could be utilized by NASA in their contract negotiation process. Its adaptation is explored here. Part III is a summary description of the various profit theories of economics.

Conclusions indicated that the aerospace group of firms had lower margins than the groups of non-government manufacturing companies. The aerospace industry's rate of earning was closer to the capital cost than that of the other groups. Finally, pricing formulas based on capital investment do not appear to be a desirable development in government procurement because of the complex and controversial nature of such formulas.

12. Brown, Thomas A. An Evaluation and Critique of The Weighted Guidelines Profit Concept as Applied in the Military Airframe Industry, Ohio State University Thesis, July 1967, (LD 33256A).

The purpose of this thesis is to evaluate the weighted guidelines method, its intent and implementing instructions. The criteria for assigning profit weights to specified elements are critiqued to determine whether these criteria respond to the stated intent of

this profit concept. Where they do not, suggestions are made for improving the subject technique of profit determination. The author identifies those areas requiring clarification or further analysis.

Conclusions: (1) Much ambiguity exists in the current guidance for implementing the weighted guidelines method. (2) The objectives of this profit concept and the techniques for accomplishing those objectives are not always clear. (3) The values developed by using the weighted guidelines method may not always reflect the current market values of the factors being evaluated. (4) The weighted guidelines method has not eliminated pyramiding of profit; it has merely quantified the extent to which such pyramiding is acceptable. (5) Defense contractors are generally able to shift the real cost risk either to the government or to subcontractors. (6) The weighted guidelines method is not truly responsive to contract risk situations. (7) The weighted guidelines method is weakest in the selection factors area where source of resources is evaluated. (8) Unless the weighted guidelines method is merged with return of investment concepts, the mutuality of government profit objectives and those of the defense industry must rely more on coincidence than on reason. (9) Although manufacturers of military airframes may appear to be making low profits when compared to sales, these profits are at least adequate when related to invested capital.

Recommendations. (1) The weighted guidelines method of profit determination should be retained but modified to more effectively accomplish its stated purpose. (2) Before any changes are instituted, further study should be made to clarify the intent of this profit concept and to identify the best methods for satisfying mutual government and defense industry profit objectives. (3) The weighted guidelines method should be blended with a return on investment concept of profit.



13. Byers, Mel D. A Study of the Relationship Between Contractor Performance and the Magnitude of the Award Fee in the Cost Plus Award Fee Contract, AFIT Thesis, March 7, 1973.

The initial objective of this research is to determine if the relative dollar value of the award fee can be used to help assure better contract performance. If such a positive relationship exists, future contract performance could be projected on the basis of completed contracts, and adjustments could be made in the award fee as applicable. contracts, and adjustments could be made in the award fee as applicable.

The data base used for this study consisted of 17 completed service contracts at the Houston Manned Spacecraft Center, and 30 current CPAF contracts at Goddard Space Flight Center. Regression and correlation analysis were used as the primary study method, and an examination of the motivational aspects of CPAF contracting provides a subjective evaluation.

Analysis indicated that no relationship existed between the monetary incentive of the award fee and the level of contract performance. Within the ranges currently available for award fee determination, an increase in the relative amount of fee would not necessarily motivate the contractor to improve contract performance. The author points out that extra contractual influences play an important role in the motivation of the contractor. Nonetheless, he sees CPAF contracting as a viable form of incentive contracting with several advantages over other incentive contract types.

14. Canes, Michael E. and Watts, Ross L. A Reconsideration of Profits in the Airframe Industry, University of Rochester Management Research Center, Working Paper No. 7326, December 1973, (LD 32304A).

The authors argue that accounting measures of firm rates of return give biased estimates of economic returns on investment and that comparisons of accounting rates among non-random samples of firms are suspect. Also, there is no theoretically valid way to relate accounting measures of returns and riskiness of a firm's business. "Abnormal" returns as measured by accounting numbers is therefore an ad hoc concept, and estimates of such returns by use of accounting data are an unreliable guide to policy decisions. Second, the authors argue that if firms earn unanticipated abnormal rates of return on investment, then changes in the firms' share prices relative to those of other firms, after adjustment for relative risk, will provide a measure of the magnitude of the abnormal returns. Under these conditions, share price data can be used to determine whether defense firms earn "too much" or "too little," and do provide some guide to policy makers. Finally, the study applied the methodology of measuring firm rates of return via share price changes to a sample of large airframe manufacturers previously selected in a study by Carroll. Whereas he found evidence of extraordinary returns to these firms via use of accounting data, the study evidence indicated no unanticipated abnormal returns over the period 1956-1966.

15. Chilcott, Thomas E. The Role of Profit in Defense Contracting, USAF Air Command and Staff College Thesis, No. 0264-66, 1966, (LD 16058).

The profit motive is generally regarded as being the guiding light of business firms. It follows, therefore, that if the government can effectively harness this profit motive it

will be able to produce greater efficiency on the part of defense contractors. This study examines the profit motive in some detail with particular reference to selected methods which have been developed to harness it in defense contracting. It concludes that, while profit and the profit motive are not the simple, clear concepts frequently assumed, they do offer the government a means of increasing the efficiency of its contractors. (A copy of this report may be obtained through inter-library loan from the Air University Library.)

16. Comptroller General of the United States.  
Defense Industry Profit Study, Report to the Congress, March 17, 1971.

This study examines profits on negotiated contracts and subcontracts entered into by the DoD, NASA, and the Coast Guard. The study focuses on 74 large DoD contractors, comparing profit on defense work to profit on commercial work. Of an average of \$94 billion in sales per year for the four years studied (1964-1969), 25% were to DoD, 71% were to commercial customers, and 4% were to other defense agencies. Profits are compared on the basis of return on sales, return on equity capital, and return on total capital investment. In addition, there is a discussion of actual vs. going in profit rates, profits by contract type, profits by product category, and profits for various categories of DoD contractors (high volume, medium volume, and commercially oriented). A separate section deals with service contracts and the operation of Government-Owned Contractor-Operated (GOCO) plants. These operations warranted separate treatment because they characteristically require little or no investment of contractor capital.

The study also examines the profitability of 61 smaller DoD contractors, and 10 subcontractors. Profit data for each are compared to data for the 74 large DoD

contractors, but the treatment is not extensive. In addition, the GAO reviewed 146 negotiated contracts to see whether it was practical to develop cost, profit, and investment data by contract. The work revealed a wide range of profit rates on defense contracts, averaging a higher rate of return than the average for the 74 large DoD contractors. GAO points out, however, that the sample cannot be considered representative for several reasons (cited in the text).

GAO found that profit before Federal Income Taxes, on defense work, measured as a percentage of sales, was significantly lower than on comparable commercial work for the 74 large DoD contractors (4.3% vs. 9.9%). Return on total capital investment (exclusive of government capital) showed a narrow margin (11.2% for DoD and 14% for commercial). When profit was expressed as a percentage of equity capital, there was little difference (21.1% for DoD and 22.9% for commercial).

The report noted that little consideration is given to the amount of capital investment required from the contractor for contract performance. Profit objectives based on anticipated costs can and do result in inequities between contractors providing differing proportions of required capital. Further, by relating profits to costs, contractors in noncompetitive situations are not provided with positive incentives to make investments in equipment that would increase efficiency and lower costs. GAO recommends that, in determining profit objectives for negotiated contracts where effective price competition is lacking, consideration should be given to capital requirements as well as to such other factors as risk, complexity of the work, and other management and performance factors.

The GAO solicited comments on a draft of the report from five contractor associations and several government agencies. The major criticism by the contractor group was that the report overemphasized the rate of return on investment and reflected a preoccupation with the need to consider contractors' capital requirements. A summary of the comments and detailed financial schedules is included in the report.



17. Comptroller General of the United States  
Government Support of the Shipbuilding  
Industrial Base, Report to the Congress  
February 12, 1975. PSAD-75-44.

This GAO study examines the effectiveness of the principal Government program to maintain the shipbuilding industrial base. The study was undertaken because of the importance of the American shipbuilding industry to the national defense and to U. S. foreign commerce, and because of the significant amount of Federal funds provided to the industry. Government support of the shipbuilding industrial base partly insures that domestic capability exists to support the prosecution of a war. Despite the provisions of the Merchant Marine Act of 1936, no recent assessment has been made of the industry's ability to support prosecution of a short duration war, which is the DoD emergency planning assumption for shipbuilding requirements. The Maritime Administration in 1973 completed a study based on a longer war. More recently, the MA has focused on the need for rebuilding capability at the close of a war rather than support capability for a war effort. Early resolution of the Government's expectation of the shipbuilding industry is essential for defining clear and finite objectives for Government support of the industry.

The Maritime Administration is currently limited in its ability to 1) provide desirable market stability for U. S. yards; 2) avoid or minimize potential adverse impact of merchant shipbuilding, or cost and delivery of Navy vessels; 3) promote specialization in constructing ship types which U. S. yards are most competitive in building; 4) reduce Federal subsidy funds required to offset the difference between U. S. and foreign construction costs; and 5) encourage U. S. shipyards to invest in facilities and maintain shipbuilding skills best suited for satisfying the Nation's needs for a private shipbuilding industrial base.

The MA needs additional authority and flexibility in order to affect necessary changes. The Secretaries of Commerce and Defense should review with appropriate

Congressional Committees their views on the emergency planning assumptions which should be used in assessing the adequacy of the shipbuilding industrial base.

18. Comptroller General of the United States  
The Operations and Activities of the  
Renegotiation Board, Report to Congress  
B-163520, May 9, 1973.

This report was prepared at the request of Congress to aid in a review of the Board's operation prior to extension of the Renegotiation Act of 1951 (Expired June 30, 1973, but extended to December 31, 1975). The evaluation of the Board's practices and procedures included a determination of 1) how the Board identifies contractors and subcontractors subject to the act; 2) how cases are assigned to the regional Boards; 3) the effectiveness of the regional Boards' operations; 4) how the Board makes excessive profit determinations; and 5) how cases are appealed to the courts.

GAO's review indicated that most excessive profit determinations involve small firms (under \$10 million in annual sales) which produce low-technology products under fixed price prime contracts. Large firms often are not subject to excessive profit determinations because they can average profits between diverse operations and because some of their products are exempted under the act.

The report also discusses the recommendations of the Commission on Government Procurement that pertain to renegotiation. The Commission recommended that the act be extended for 5 year periods (instead of 2 year periods), that all government agency contracts be covered by the act, that the statutory floor be raised from \$1 million to \$2 million (for sales, and \$25,000 to \$50,000 for brokers' fees) and that the criteria used by

the Board in profit determination be expanded and clarified. GAO generally supported these recommendations, but expressed reservations about raising the statutory floor. GAO further recommended that greater consideration be given to the rate of return on capital employed in making excess profit determinations, and that industry averages be used to provide more objective and broader based analyses.

19. Demaree, Allan T. "Defense Profits: The Hidden Issues," Fortune, August 1, 1969.

This article appears in Fortune along with several others that examine various aspects of the military-industrial complex. The author first addresses the question of the level of defense profits, citing from the LMI study, the study by Weidenbaum, and Congressional criticism. He points out that, while critics of the LMI study have used Weidenbaum to support their position, the Weidenbaum study is based on a very limited sample, and questionable statistical technique. The LMI study, on the other hand, uses a large data base, and has been scrutinized for statistical soundness by Professor Robert F. Vandell of the University of Virginia Business School.

The author then discusses several aspects of the low return on defense business, including changes in policy during the McNamara era, peculiarities of the contracting system, and the changing structure of the defense industry. Finally, he presents the recent feelings in the Pentagon that profits should be linked to investment, and that risk should be given greater consideration in the determination of defense profits.

20. Department of Defense (Comptroller)  
The Economics of Defense Spending: A Look  
at the Realities, July 1972 (193 p.).

This report covers the whole spectrum of DoD economics, and confronts all the major criticisms of Defense spending. Included are discussions of recent defense spending trends; defense and employment; the impact on technology and industry; defense and the balance of payments; defense in the public spending picture; pay and price trends; DoD budget trends; increases in cost estimates; and profits on defense contracts. The treatment of each subject is geared toward reflecting major criticisms, and presenting the DoD side of each question. In light of this approach, the primary critics are identified, a good deal of hard data are supplied, and each section provides thorough references.

The section on profits on defense contracts takes issue with the general notion that profits are too high, and debates the results of studies by Kaufman and Weidenbaum (listed elsewhere in this resume). This section presents data from the Kaufman, Weidenbaum, LMI, GAO, and Stigler and Friedland profit studies, and demonstrates the validity of the DoD position. The major drawback to this report as a primary source is its argumentative style. While this style is not appropriate for primary material, it is well suited to the task of pointing up the flaws in some of the major criticisms of DoD contractor profitability.

21. Dixon, Commander Max Wayne, USN.  
A Statistical Analysis of Deviations from  
Target Cost in NAVAIRSYSCOMHQ Fixed  
Price Incentive Contracts During the 1949-  
1965 Time Frame, Naval Postgraduate  
School Thesis, March 1973, (LD 29514)  
(AD 761 396).

This thesis statistically analyzes 15 years of Naval Air Systems Command Headquarters fixed-price incentive contract experience in the aircraft and missile



procurement field. The relation of basic contract parameters to contract outcome is explored through regression and analysis of variance techniques. The inferences arising from the statistical analysis are combined with other information to draw conclusions regarding incentive contracting. The most important of these is that there is no evidence that the negotiated sharing ratio has any influence on the contractor during the performance of the contract.

22. Drake, Hudson B. "Major DoD Procurements at War with Reality," Harvard Business Review February 1970, (LD 23873).

In this overview of the origins and workings of the Defense Department's current practices for procuring advanced weapon systems, the author presents his views about the recent and highly publicized overruns being rooted in a basic flaw in government policy. Specifically, he feels the government does not recognize the softness of the technologies used in these systems, and tries to write and administer contracts as though the technology were well in hand and no unexpected problems could possibly crop up. The author also emphasizes the fact that this situation is of concern to business at large, and not just the major defense contractors, because the government is likely to repeat this error in other areas, now and in the future, where it seeks to combine with industry to bring large, novel, and sophisticated systems into existence.

23. Fisher, Irving N. A Reappraisal of Incentive Contracting Experience, RAND Corp., RM-5700-PR, July 1968 (AD 673 343).

This Memorandum examines the effectiveness of incentive contracts as a means for controlling defense procurement costs. The study considers the various effects that incentive contracts may have on both contractor's performance and contract costs, and presents empirical evidence suggesting that incentive contracts have not accomplished their intended goal of increased efficiency and lower procurement costs.

Cost overruns and underruns are examined for a sample of Air Force contracts for major weapon systems. Although the results illustrate the fact that underruns are more common with incentive contracts than cost-reimbursable contracts, the observed underruns do not seem to be related to the incentive features of these contracts. Cost underruns appear to be no larger for contracts with large sharing rates than for those with small ones. This suggests that incentive contracts have not had an important effect on contract costs or on contractor performance.

What is needed to make cost incentive contracts more effective are tighter target costs. In order to insure that incentive contracts motivate contractors toward increased efficiency and lower costs, it is essential that the target cost be a realistic estimate of expected actual costs. Accordingly, future gains in incentive contracting are going to come through improved methods of determining target costs, rather than through elaborate incentive sharing arrangements. (Author)

24. Fisher, I. N. and Hall, G. R. Defense Profit Policy in the United States and the United Kingdom, RAND Corp., RM-5610-PR, October 1968 (AD 681 118).

This memorandum contrasts defense profit policies and practices in the United

States and the United Kingdom. It examines the major conceptual differences between the two systems, discusses the different methods and procedures for determining defense contractor's fees, and compares profit experience in the two countries. No attempt is made to resolve the question of the appropriate level of defense profits or to explore the issue of revising the Armed Services Procurement Regulation (ASPR) treatment of contractor investment. The goal is limited to describing how profits on defense contracts are determined in the United Kingdom and the advantages and limitations of such a system.

The fundamental difference between the two systems is that the U. S. profit policy is based on return on costs, while that of the U. K. is based on return on assets. Comparison of the two procedures permits examination of the application of a cost-base profit system and an asset-base profit system to defense contracting. This comparison indicates that the U.K. procedures might be difficult to apply in the U. S. It also suggests the need for a U. S. policy framework that permits more explicit comparison of the capital compensation requirements of U. S. defense contractors.

The study presents profit data for a sample of aerospace firms and a sample of aerospace contracts.

25. Fisher, I. N. and Hall, G. R. Risk and the Aerospace Rate of Return, RAND Corp., RM-5440-PR (also P-3725) December 1967 (AD 663 726).

This study addresses the question of whether the above average rate of return on net-worth earned by aerospace firms results from above average risk exposure. First, a theoretical basis for measuring risk is developed. Risk is defined as the probability that

earnings in a future period will differ from an anticipated value. The anticipated value used in the risk determination is the mean return of the individual firm. The standard deviation and skewness of the dispersion of observed earnings of a firm are adopted as the measure of risk. Both measures are found to be statistically significant. Consideration is given to the different results yielded by alternative measures of risk and the impact of various statistical adjustments. A section on statistical findings is included.

Rates of return are then compared for a sample of 88 firms for the years 1957-1964. The firms are divided into 11 industry groups, and both observed and risk-adjusted rates of return are compared. In both cases the Aerospace Industry ranked second, behind Drugs. This finding implies that, for this sample, above average rates of return cannot be explained by above average risk exposure. Return on net-worth is used as the measure of profit in this study to reflect the returns to stockholders' (owners') equity. While this measure is used throughout the report, there is data included showing rate of return on sales, and on capital. The study acknowledges that by both these measures the Aerospace Industry ranks 10th of the eleven industry groups.

The authors are careful to point out that the study is one of profit comparability, not profit adequacy. The risk adjusted rates of return reflect rates of return under equal risk exposure, but do not indicate the appropriateness of the various corporate profits, as this is dependent on several additional factors.

26. Fisher, Irving N. and Hall, George R.  
Risk and the Corporate Rate of Return,  
RAND Corp., P-3725, November 1967  
(LD 25538) (AD 661 554).

Although economists have great interest in the correlation between risk and profits, few studies have attempted to quantify the relationship. Consequently, this paper



considers the concept of risk differentials in corporate profit and proposes a model for measuring them. Using this model, the risk-rate of return relationship was estimated for a sample of firms in various industry groups. For each industry group, average risk-adjusted rates of return were also obtained.

See also Irving N. Fisher and George R. Hall, Risk and the Aerospace Rate of Return, December 1967.

27. Fremgen, James M. A Survey of Capital Budgeting Practices in Business Firms and Military Activities, Naval Postgraduate School Report, November 1972, (LD 28897) (AD 752 013).

This report presents the results of a survey, taken during 1971, of the actual practices used by financial managers in business and military organizations in connection with major capital investment decisions. Responses were received from 177 business firms in a variety of industries and from 70 military installations. The primary practices reported are the uses of various financial criteria for assessing the profitability of a proposed capital investment. Attention is given to use of these criteria in special situations and to some of the problems that may be associated with using them. The condition of capital rationing is explored to determine the extent of its occurrence, the causes of it, and the practices adopted by management to deal with it. Finally, the respondents offer their views about the most critical and the most difficult phases of the total capital budgeting process. The report includes critical comments by the author to set the practices reported in an appropriate theoretical context.

28. Goodhue, Lowell H. "Fair Profits from Defense Business," Harvard Business Review, March 1972.

In current DoD contract negotiations, profit is based on a percentage of expected costs. This practice, says the author, discourages cost reductions, and fails to provide adequate compensation for investments in production facilities. He argues for a revised policy that partly relates profit to capital employed by a contractor; and he also proposes a commercial, durable goods profit standard that recognizes the cost-reducing potential of facilities and the greater uncertainty of risky contracts. Moreover, the procedure involved is relatively simple. It has been extensively tested by DoD and the Logistics Management Institute (LMI) in Washington, D. C.

An ASPR subcommittee was assigned the task of testing procedures for allocating capital to contracts. These procedures were tested in a sample of 50 contracts, and, by the end of 1968 a proposed method of using capital-employed data to modify the WGL profit system had been developed. Further studies were made in 1969, and in 1970 a new ASPR subcommittee tested the latest proposed procedures on a sample of 200 contracts. The tests indicate that this system can be effectively applied to the WGL profit objectives. Data from contractors in 1971 have been reflected in this latest proposal.

29. Graham, Jay. The Federal Government and Contract Profit Analysis: Background, Philosophy, Policy, and Practice, U. S. Army Logistics Management Center, (LD 25105) (AD 710 416).

The purpose of this research paper is to present in one place, a comprehensive discussion of contract profit analysis within the principal procuring agencies of the

Federal Government. The paper traces the impact of history and policies upon the evolution of pricing and profit philosophy and policy through the development of weighted guidelines. Weighted guidelines procedures are discussed, with a proposed system of weighting profit for overhead costs, based on the levels of effort for direct labor.

30. Hall, George R. Defense Procurement and Public Utility Regulation, RAND Corp., RM-5285-PR, September 1967, (AD 659 731)

This Memorandum compares the regulation of public utilities and of defense contractors. Since both systems base their prices on costs, their regulation involves similar problems of controlling perverse managerial incentives. The two systems also differ significantly. In the procurement system the contractor's fee is based on the total cost of producing an item; public utility profits are based on the firm's contribution of an input--capital. This difference poses contrasting sorts of control problems for regulators. In the public utility sector, the major control problem is to prevent overinvestment. In procurement, basing profits on total costs gives the contractor a more general incentive to increase costs; all cost elements are likely candidates for inflation.

The study investigates various specific control problems. It is concluded, after an examination of the control of operating expenses, that the basic regulatory problems are inherent in cost-based prices. These problems do not appear remediable by contracting practices such as incentive fees, profit rate differentials, and improved cost estimation techniques.

The study examines two theories relating to procurement cost control. One is that contracts will be "loaded" with personnel and other direct expense inputs. These inputs

may not contribute notably to the project in hand, although they increase the firm's capabilities and reputation and thereby help it obtain future work. The second is the current worry that overhead costs will grow unduly high. Two conclusions emerge. The first is that undue growth in direct expenses is as likely as undue growth in indirect costs. The second is that control of overhead costs by contracting separately for the two kinds of costs would necessitate control over the contractor's shifting expenses between categories according to his decisions about the type of inputs to use in the production process. Such shifting could result in lower overhead costs but higher system costs.

The desirability of applying the public utility concept to procurement is also considered. Such an innovation would mean changing the fee base for weapon system manufacture from total costs to investment. The conclusion is that such a shift would be illogical. The preference for private rather than public management of the development and manufacture of weapon systems does not hinge on a preference for private investment. Nonetheless, a serious drawback to our present profit system is the lack of a clear link between the performance we seek to motivate the fees defense contractors earn.

A public utility type of regulation does not offer a solution to the problems of procurement regulation. Instead of intensifying regulation, it seems much more promising to minimize the need for it. This will require changes in weapon system acquisition strategy, in which case innovations in acquisition procedures, such as total-program-package procurements and second-sourcing may have great significance. (Author)



31. Hall, George R. The Impact of the Weighted Guidelines Profit System on Defense Contract Fees, RAND Corp., RM-6183-PR, December 1969.

This is an examination of the defense contract fees negotiated by the DoD and how they have changed since the introduction in 1964 of the Weighted Guidelines System (WGLS) for computing fees. The study focuses on target fees for 10,054 contracts negotiated between 1959 and 1967 for companies in two major categories. Sample A consists of firms on the 1967 list of 100 largest defense contractors; Sample B consists of all other defense contractors. The impact of the WGLS on average target fee rates for contracts held by defense firms is examined, and there is some discussion of actual fees and earnings on contractors' assets. Data on actual fees and profits are fewer and less complete; so conclusions in this area must be regarded as tentative.

The study shows that the WGLS led to higher average portfolio target fee rates, aggregating individual contracts by contractors. Sample A showed a relatively larger increase in target fee rates than Sample B (though there were substantial differences in the experiences of individual firms). Sample A firms did better throughout the entire distribution of profit rates, except at the extreme high level of rates where there were more Sample B firms. There was considerable dispersion among the changes in average fee rates for different products and types of contracts. On the whole, the WGLS resulted in an approximate 10 percent increase in target fees for past WGLS procurements.

Some firms were able to convert the increase in target fees into substantial increases in corporate rates of return on assets. Other firms were not. Changes in allowable costs and changes in the relative risk of a difference between actual and target profits combine in complex patterns. Consequently, there is no apparent relationship between increases in target fee rates and changes in the overall corporate profitability of the leading contractors. Raising the profitability of defense investment through the WGLS seems to have been, on the whole, unsuccessful.

32. Howard, John T. Profits in Defense Industries, ICAF Report, March 1966, (LD 11018).

The defense industry has experienced substantial growth during the last decade; approximately 80 percent of the industry's total revenues continue to flow from government contracts with the Department of Defense and the National Aeronautics and Space Administration. Defense industry profits measured by the rate of return on investment are higher than the average, but profits measured as a percentage of sales volume are lower than the average, for all manufacturing. However, the typical defense contractor is in the strongest financial position in its history. The hazards of the defense industry's large scale dependence upon government business have been overemphasized and, although the industry will continue to have its cyclical aspects, the greater use of incentive contracts combined with efficient management, will provide the opportunity for higher profit margins and greater total earnings. (Student research project report available on a loan basis from the ICAF Library.)

33. Industry Advisory Council, Panel C Report Maintenance of a Healthy Defense Industrial Base, 1969.

Panel C, a working panel of the Industry Advisory Council (IAC), had the responsibility of studying and reviewing ways and means to foster and maintain a healthy Defense Industrial Base (DIB) as follows:

- Monitor profit performance on defense work and evolve measures of profit adequacy by type of work, type of contract, risk assumed, etc.
- As a related matter, continue to evaluate cost allowance (disallowance) policies for reasonableness. Be particularly alert to unusual trends which require prompt understanding, such as the growth in overhead.

- Seek to develop more efficient and effective practices of obtaining the optimum degree of competition on defense awards. Explain these practices convincingly to Congress and the public.
- Improve long-range planning to minimize uncertainties and foster sound long-term capital investment.

The Panel C Report discusses defense contractor profitability based on data from a sample of 40 companies (developed by LMI for a defense industry profit study in March 1969; Task 69-1). Average performance of the defense contractors was considerably below that of a commercial comparison group of 208 firms classed by the FTC/SEC in six durable goods groups. When broken down into quartiles, each quartile of defense contractors performed less well than the comparable quartile of commercial firms.

In addition to the discussion of profits, Panel C considered contract warranties, and application of cost principles in their examination of the condition of the DIB. Conclusions indicated the need for consideration of profit on capital employed in profit policy, and allowability of warranty costs as a contract cost.

The report of the Working Group on Contract Warranties is included.

34. Jones, Dennis C. Profits in Defense Industries, ICAF Thesis, March 1965, (LD 98848).

The bulk of the systems required to maintain security are obtained from American industry operating in a free enterprise system. The total cost and profit for these defense systems are artificially arrived at through negotiation between buyer and seller in an imperfect market. The present DoD profit policy, coupled with emphasis upon use of incentive contracts, is a step in the right direction because it places it up to individual

contractors to determine through performance their future in the defense business. It is recommended that the DoD develop a centralized contractor rating system covering performance of the least number of contractors who account for the greatest share (85-90%) of the dollars expended for research, development and production. Cost efficiency, reliability, value engineering, delivery, quality and the other factors to be rated under the weighted guidelines system for establishing target fee or profit should be specifically rated. This data would then be available for the multitudes of government negotiators dealing with industry. (Manuscript available on a loan basis from the ICAF Library.)

35. Kaufman, Richard F. "MIRVing the Boondoggle: Contracts, Subsidy, and Welfare in the Aerospace Industry," The American Economic Review, Papers and Proceedings, May 1972

This article takes a critical view of the Government-contractor relationship. Government-aerospace interlocks, the virtual elimination of competition, and government dependency on its defense industrial base have been accompanied by serious weakening of standards of public accountability and efficiency. An analysis of selected weapons systems currently being built showed significant cost overruns, schedule slippages, and degradation of performance.

In a short discussion of the contract system, Mr. Kaufman attacked favored treatment for the larger firms, free access to government funds and property, high profits, and special assistance to companies that find themselves in trouble. Loose accounting practices result in improper charges for depreciation and overhead and direct costs.



Profit studies have generally been inconclusive because they were based on narrow, unrepresentative samples, or unreliable questionnaire responses. The GAO study is mentioned and indicates, in Mr. Kaufman's judgment, that profits of the larger aerospace contracts are too high. There is a discrepancy between the results of the 74-firm sample and the audit of 146 contracts. The individual contracts showed exceedingly high profits on \$4.3 billion of defense business. Furthermore, when the figures for the 74 firms are disaggregated, 12 firms that account for more than 55% of total DoD aerospace contracts during the study period show substantially higher profit rates for defense work than for commercial work. With the disaggregated data for the aerospace firms, it is possible to reconcile the firm sample data with the contract audits. These results are also consistent with the study by Murray Weidenbaum and Admiral H. G. Rickover's assertions about excessive profits in the shipbuilding industry.

Mr. Kaufman also discusses subsidies and welfare in the aerospace industry. The article does not include much supportive data.

36. Logistics Management Institute  
Cosideration of Contractor Investment Under  
the Weighted Guidelines, Task 64-5, March 1964  
(AD 472 955).

This study explored the degree to which the Weighted Guidelines system of computing profit objectives tends to give weight to the financial investment furnished and employed by contractors in performance of government contracts. Its more specific objective was to provide a framework in which to explore and discuss some of the questions and preliminary conclusions set forth in a draft report entitled, "Preliminary Paper on Allowability of Interest Expense for Government Contract Costing." This report

explored both 1) the possible treatment of interest as an allowable cost under government contracts, and 2) the adequacy of the Weighted Guidelines system as a vehicle by which to reflect and reimburse contractors' cost of capital. The preliminary conclusion set forth in the report was that the Guidelines system in its present form does not "adequately" consider contractors' financial resources.

This presentation by LMI was intended to illustrate, however, several ways in which the Weighted Guidelines do tend to give at least indirect weight to contractors' investment. Although the effect is indirect, it is significant.

37. Logistics Management Institute  
Defense Industry Profit Review,  
Task 66-25, November 1967  
(AD 664 700 - Vol. I, AD 664 771 -  
Vol. II).

Volume I concentrates primarily on findings and conclusions. The study examines financial data for the years 1958 through 1966 from 65 defense contractors divided into low, medium, and high volume categories. Comparisons are made between profits on contractors' defense business, contractors' commercial (non-defense) business, and on a sample of commercial manufacturing companies whose products closely resemble those purchased by the DoD. Because of the sensitive nature of the data, all results are expressed in consolidated form as average profit rates. Statistical data are also presented to indicate the degree of variation from the mean.

The study examines several measures of profitability, including profit as a percent of sales, of equity capital investment, of total capital investment, and of defense sales on different types of contracts (prime contracts, subcontracts, and price competitive contracts). Also included are unallowable/nonrecoverable costs as a percent of sales.

Findings on these data indicate a general downward trend in most measures of defense business profitability, compared with a general upward trend in the profitability of commercial business. Average profits are found to be lower on defense business than non-defense business (of contractors) and lower than average profits of the commercial sample. The report also includes a section on discussion with the defense industry (why profitability is what it is, what defense profits should be, and what changes should be made, if any, in DoD policy).

Volume II contains supporting data: an explanation of contractor selection and data collection, extensive financial data, and results of interviews with sample companies. If there is a deficiency in the data, it is that only companies who volunteered data were used, leaving open the possibility that companies with high rates of return were excluded due to their lack of interest in the project. The data collection methods used, however, would make this possibility unlikely.

38. Logistics Management Institute  
Defense Industry Profit Review,  
Task 69-1, March 1969 (AD 685 071).

This study is a continuation of the review and analysis of industry profit data (including data for 1967) for the purpose of relating profits to DoD procurement policies and practices (see LMI Task 66-25, November 1967). The report is self-contained; where 1958-66 data or other information from the prior report are pertinent, they are repeated. This Report does not, however, cover all of the material in the preceding profit study, and it is suggested that the two be used in conjunction.

It was found that average defense profit as a percent of total capital investment (TCI) showed a general downward trend while average profits in the commercial sectors showed a general upward trend. Also, the commercial market of the defense industry

companies and the commercial sample companies showed much more rapid expansion than did the defense market in the ten-year period studied.

LMI concluded that the increased use of competition and fixed price contracting and the accelerated rate of inflation with contractors under-estimating cost increases had been responsible for reduced profit/sales ratios on defense business. Increased company investment in facilities and increased use of fixed price contracts (which require more working capital) were responsible for reduced total capital turnover on defense business. A company with low capital turnover must earn a higher profit on sales than a company with high capital turnover in order to earn the same profit on TCI. Profit inequities exist because differences in capital requirements are not reflected in defense profit rates.

LMI recommended that capital requirements be given greater consideration in profits for negotiated contracts and raised the question of whether contractors are likely to be drawn away from the defense market by more attractive commercial profit opportunities. This report makes no recommendation as to what is an appropriate level of profit, rather it is intended to assist the Defense Department in its assessment of the adequacy of defense business profits.

39. Logistics Management Institute  
Defense Industry Profit Review, Task 69-27  
March 1970 (AD 703 303).

This task review realized profit data from a representative sample of medium and high volume defense contractors in a continuation of the Defense Industry Profit Review started by LMI in 1967 (see LMI Tasks 66-12 and 69-1). The data used in this study are primarily from 1968, although 1967 data are used where appropriate for comparison. A section is included showing the eleven year trends for the years 1958 through 1968.



In addition to the analysis of profit data, the report addresses some questions that were raised by the two previous studies. Of primary importance are 1) the question of whether failure of some solicited companies to participate in the study affected the statistical validity of LMI's findings and conclusions, and 2) the question of whether company capital was allocated properly between defense and commercial business. A summary of the analysis is included, and demonstrates the validity of the data in both these areas.

Findings of the study support earlier findings and are broken down into three areas: 1) Average defense business profit on total capital investment (TCI) declined again in 1968 (profits were fairly steady in '65, '66 and '67) and average commercial profit on TCI was again higher than defense business profit. The gap widened in 1968. 2) Both high and low profit defense businesses have been less profitable than high and low profit commercial businesses, respectively. 3) The commercial market continued to expand more rapidly than the defense market.

Conclusions: 1) There is a low average profit on defense business as compared with commercial business; 2) profit inequities exist as a result of different capital requirements among contractors, and 3) there is an increased capability of defense industry companies to compete in commercial markets.

The data analysis in this report strengthens its validity.

40. Logistics Management Institute. Study of the Treatment of Interest Costs Under Government Contracts, Task 65-10, April 1965.

This task was for support of a Defense Industry Advisory Council (DIAC) working group studying interest costs. The study was based on the evaluation of statistical trends

of 220 companies regarding leasing, and field interviews of the industry. The study found that 1) the defense market had adjusted to the unallowability of interest as a cost; 2) such disallowance tends to create a bias in favor of leasing by contractors, but the bias is reduced by increased use of fixed price contracts; 3) decisions to lease are made for many other reasons, the unallowability of interest being a minor reason; 4) the Weighted Guidelines should be modified to give increased consideration to capital investment by contractors.

41. Logistics Management Institute. Weighted Guideline Changes and Other Proposals for Contractor Acquisition of Facilities, Task 66-12 September 1967, (AD 660 388).

This report proposes ways of providing contractors' incentives to acquire facilities whenever the advantages to the Government are expected to exceed the facilities cost. The primary motivation is contractors' profits which should depend on 1) investments on necessary equipment, inventory, accounts receivable, and other assets, 2) management and technical skill, and 3) cost, quality, and schedule performance.

The report recommends that the Weighted Guidelines be modified to include two new elements: 1) profit on the net book value of facilities, and 2) profit on the "operating capital" (equity plus borrowed capital less investments and facilities) allocated to a contract. Methods of allocating these values in proportion to a) depreciation charges, and b) total costs are proposed. With the addition of those elements, the profit objective percentages on costs should also be modified.

Facilities involve higher risk and require a larger percentage of profit than other capital. Methods are discussed for allocating facilities and operating capital to contracts

using present accounting data. The adequacy of incentives to acquire facilities is examined closely, however, the study does not attempt to establish or deny the adequacy of present facilities or rates of accumulation.

In addition, the study recommends 1) that rental be charged on general purpose government-owned property in the hands of contractors so as to remove the resulting competitive advantage, 2) the inclusion in overhead of gains and losses on the premature sale of assets, and 3) increased use of long term contracts where practical.

42. Mruz, Michael J. A Dual Industry Analysis to Give Perspective to Aerospace Defense Industry Profits, AFIT Thesis March 1972, (LD 28106) (AD 741 411).

This thesis examines the aggregate profit rates of various samples of aerospace defense contractors within the particular operating environment of the defense and space systems market. To give perspective to this particular operating environment, a parallel study of the public utility industry and its operating environment is also included. The analysis includes a detailed examination of return indices for both industries and a comprehensive description of the particular industry operating environments. The elements of the operating environments studies are capital investment, research and development, demand, competition, and regulation and contracts. On an aggregate basis, the study concludes that the return rates for the public utility and aerospace defense industries are not dramatically different, either in magnitude or trend, and that when these rates are considered within the perspective of the operating environments described in the thesis, the aerospace defense industry's "return on operating environment" is not unlike that achieved by the public utility industry.

43. Parker, John M. An Examination of Recent Defense Contract Outcomes in the Incentive Environment, AFIT Thesis September 1971, (AD 731 764).

This thesis presents an empirical evaluation of the outcomes of a large number of recently completed defense contracts. Profit outcomes and cost growth resulting from changes in the scope of the contract and from overrun/underrun are examined for incentive and fixed fee contracts. Incentive features such as share ratios and multiple incentives are investigated to determine their effect on contract outcomes. Linear regression and analysis of variance techniques are used to analyze the outcomes of 2,683 Army, Navy, and Air Force contracts. The types of contracts included in the data sample are fixed-price-incentive, cost-plus-incentive-fee, and cost-plus-a-fixed-fee contracts. No meaningful relationship is found to exist between cost overrun/underrun and changes in the scope of the contracts analyzed. The contract change percentage is found to decrease as the contractor's portion of the share ratio increases. Also, incentive contracts with large contractor share rates are found to have a tendency to overrun. An examination of multiple incentive contracts reveals that contracts with performance incentives, as well as cost incentives tend to earn performance incentives, regardless of the contract cost outcome. (Author)

44. Paulson, Henry M., Jr. DoD Profit on Capital Policy, OASD (Comptroller) Washington, D. C., October 1972, (LD 32879A).

This document contains the report of the author's analysis of the problems pertaining to our cost-based profit policy. He provides an in-depth evaluation of the following basic



policy objectives: 1) to attract adequate capital to assure an efficient and responsive industrial base for national security; and 2) to reduce the overall cost of weapons by providing incentives for industry to invest in modern efficient equipment and facilities.

45. Renegotiation Board (The). Annual Report  
published in December for the Fiscal Year ending  
June 30, Washington, D. C.

The annual report of the Renegotiation Board gives an overview of the operations and activities of the Board for the preceding fiscal year. Included are sections on the purpose and process of renegotiation, changes in regulations during the fiscal year, changes in operating procedures during the fiscal year, and data on filings, screenings, processing, and completions during the year. Aggregate data are presented on excessive profits determinations, appeals, and exemptions of commercial articles and services. Selected data on the Board's determinations of excess profits for individual companies are appended. Included in the financial data are profits as a percent of sales, capital, and net worth, capital and net worth turnover rates, renegotiable sales and renegotiable profits, all stated both before and after determination. It is pointed out that these data do not represent the totality of information needed for a complete evaluation. Contractors are listed along with their product or service and its SIC code identification.

The report does not go into great detail, but is valuable in giving insight into the magnitude and scope of the operations of the Board.

46. Stigler, George J. and Friedland, Clair.  
"Profits of Defense Contractors," The American Economic Review, September 1971.

This short article mentions two methods of profit investigation. The first is the 1970 Defense Industry Profit Review by LMI which studied rates of return on total capital invested for forty major defense contractors. This article gives only a very brief summary of that study, but does state a general finding that defense profits were higher than commercial profits prior to 1961 and lower thereafter.

The rest of the article deals with a stock market investment analysis which compares the results of a \$1,000 investment in each of 54 large defense contractors' stocks with a \$1,000 investment in each stock traded on the New York Stock Exchange. Stock Market experience avoids the complications of accounting practices, including the difficulties of segregating assets and income within the enterprise. Data was evaluated for the years 1948 through 1968: in each case, all dividends were reinvested. The results seem to agree with those of the LMI study: in the 1950's, investments in the defense contractors' stocks were almost twice as profitable as an investment in all listed stocks; in the 1960's, investments in defense contractors' stocks did somewhat worse than an investment in all listed stocks. An additional finding was that defense business seems to be somewhat riskier. The article lacks comprehensive data.

47. Strayer, Daniel E. An Inquiry Into the Feasibility of Employing Return on Investment as the Principal Criterion for United States Government Negotiated Contract Profit Determination, MBA Thesis Ohio State University, 1965.

The objective of this research is to examine the feasibility of employing return on investment as the principal criterion for determining profit levels on U. S. Government

contracts negotiated with the aerospace-defense industry. A discussion of the definitions and expressions of profit helps to create the necessary perspective from which to explore the question. Included in this discussion are the accounting expressions of profit, economic theories of profit, legal and regulatory approaches to profit, and methods of comparing profits. There follows a discussion of the aerospace-defense industry that deals with its composition, the nature of the firms, the product, and the market.

The author concludes that the accounting concept of profit is conceptually vague, and does not provide a clear and comprehensive theory for use in the aerospace-defense environment. The study of economic profit theories indicates that a combined uncertainty and innovation profit theory offers a theoretically sound and comprehensive basis for paying profits for aerospace-defense programs. Furthermore, there is a high degree of compatibility with the uncertainty-innovation profit theories and return on investment.

The theoretical advantages of employing a return on investment as the principal criterion for determining negotiated aerospace-defense profit levels are significant. The author recommends further study to establish the base profit rate and implementation procedures. He further recommends study and testing in an actual procurement environment.

48. Trimble, Jerry E. An Analysis of DoD/NASA Contractor Profitability in the Incentive Contract Environment, Master's Thesis, Air Force Institute of Technology.

This research evaluates the results of the increased use of incentive-type contracts by the DoD and NASA. The efficiency and productivity resulting from the use of capital and labor resources by the defense and space firms are compared over a period of time

with a group of similar firms having purely commercial business. The sample of firms was taken from the Fortune 500 list for each of the years 1956 through 1969. In addition to the data from Fortune, data were collected from the DoD and NASA (the top 100 contractors in each case). The Fortune data is divided into three categories: Zero (0) - firms not in the DoD and NASA listings, Low (L) - firms with DoD and NASA sales not more than 50% of total sales revenues, and High (H) - firms with DoD and NASA sales amounting to more than 50% of total sales revenues.

The bulk of the study compares data from Group 0 and Group H for the following financial indications: net profit, return on sales, return on equity capital, return on total capital, return on assets, asset and capital turnover, total assets turnover, equity capital turnover, and sales dollars per employee. Each indicator is treated thoroughly, and the data is presented in both graphic and table form. In several cases, data for all durable goods manufactured, listed by the SEC-FTC, is included for an additional comparison.

The analysis shows that the intensified incentive environment has failed to induce DoD and NASA contractors to move toward increased efficiency and productivity in the use of capital and labor resources. These firms as a group are less profitable and show a less favorable financial status than purely commercial firms.

49. Tynan, John E. and Langford, John W.  
A Study of the Effectiveness, Acceptance,  
and Use of Weighted Guidelines as the Basis for  
Negotiation of Profit Under Air Force Contracts,  
AFIT Thesis, August 1965, (LD 09801) (AD 479 840).

Findings indicate there was no significant difference between the spread of profits negotiated before weighted guidelines and the spread of profits negotiated on the basis of



weighted guidelines. There was a significant difference between the actual spread of target profit rates developed with weighted guidelines and the widest spread theoretically possible with weighted guidelines. Application of the criteria of understanding to the evaluated results of the questionnaires indicated that the interpretation of the weighted guidelines policy by Air Force contracting personnel did not show an acceptable level of understanding.

50. U. S. Army Logistics Management Center.  
Effectiveness of Award Fee Provisions,  
In-House Study No. Pro 513, Publication Date N/A  
(LD 32812).

The study objective is to evaluate the effectiveness of the cost-plus-award-fee (CPAF) contract type in Army contracting. This includes assessing its value in motivating contractors, the current level of award payments, and the cost effectiveness of the CPAF contract in relation to other contract types. The approach will consist primarily of a review of CPAF and cost-plus-fixed-fee (CPFF) contracts, interviews with contracting personnel, and statistical analysis of data to determine the significance of differences in the CPAF and CPFF data.

51. U. S. Congress, House of Representatives.  
Defense Industry Profit Study of the General  
Accounting Office, March 1971, (LD 25952A).

This is a report of the Hearings Before a Subcommittee on Government Operations, House of Representatives, 92nd Congress, 1st Session. The purpose of the hearings was to

determine the validity of press allegations that the Comptroller General's report entitled, "Defense Industry Profit Study," submitted to the Congress on 17 March 1971, had been "softened" or diluted as a consequence of pressures by the Department of Defense and industrial contractor associations.

The Committee expressed complete support for the Comptroller General and the procedures used in handling the report and the findings and recommendations made. Included in the text are the two GAO draft reports, as well as a copy of the final report.

52. U. S. Congress, House of Representatives,  
Committee on Banking, Currency and Housing.  
Oversight of the Renegotiation Act, First Session,  
94th Congress, June-July 1975.

The Renegotiation Act is temporary legislation which has been renewed every 2 or 3 years, a total of 12 times, since 1951. The Renegotiation Act is presently scheduled to expire on December 31, 1975. Although in the past the act has often been renewed with little examination or change, the Subcommittee on General Oversight and Renegotiation is thoroughly reviewing the operations of the Renegotiation Board and the issues surrounding it in an effort to reinvigorate the Board. While the hearings have not yet been completed, the text of the hearings from the first session is in print and contains the bulk of the information presented to the committee.

Among the issues addressed in these hearings are the following: the structure and organization of the Board itself, the temporary nature of the act and the Board, statutory factors including the feasibility of clearer guidelines for excess profit determination, the effect of renegotiation on small versus large government contractors, product line

renegotiation, the numerous and sometimes questionable exemptions in the Renegotiation Act at present, and the adequacy of the resources presently available to the Board.

Statements and additional information were presented by many individuals and groups including the Chairman of the Renegotiation Board, Admiral Rickover, William Proxmire, the GAO, members of Congress, and industry group representatives. The GAO report on the Operations and Activities of the Renegotiation Board (May 9, 1973) is included in the text.

53. Weidenbaum, Murray L. "Arms and the American Economy: A Domestic Convergence Hypothesis," American Economic Review, Papers and Proceedings Washington, D. C., December 28-30, 1967.

The close, continuing relationship between the military establishment and the major companies serving the Military market is changing the nature of both the public sector of the American economy, and a large branch of American industry. The DoD has gradually taken over many of the decision-making functions which are normally the prerogatives of business management. This shift of authority in the decision-making process has limited to a considerable degree the entrepreneurial actions of many government oriented corporations, the prime example being the American shipbuilding industry. Three major aspects of this participation in private decision making are identified: the choice of which products to produce; the source of capital funds; and the internal operations of the firm.

A comparison is made between six large defense contractors and six commercial firms with similar sales volumes. The comparison shows that while the defense firms have a noticeably lower return on sales, their capital turnover rate is far higher than that of the commercial firms due to the large amount of government owned plant and equipment,

and progress payments. This high capital turnover results in a greater return on net worth than that experienced by the commercial firms in the sample. The comparison was made over two four-year periods, 1952 - 1955 and 1962 - 1965.

The data is extremely limited and the sample size very small. Much of the data for this paper was taken from earlier studies, including a Stanford Research Institute study in 1963, and a study by the Midwest Research Institute in 1966. However, reference is made only to excerpts from these studies, not to findings or conclusions. For an interesting in-depth look at this paper, see The Economics of Defense Spending: A Look at the Realities, DoD Comptroller, July 1972, listed elsewhere in this bibliography.



#### IV. APPENDIX

The Title Index is a comprehensive list of the publications reviewed in this bibliography arranged by title. It is provided as a cross reference to facilitate the location of specific publications. The numbers identify the publications according to the document numbers in the Master Index and the Annotated Bibliography.

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APPENDIX B

DIGEST: TAX REFORM HEARINGS ON  
CAPITAL FORMATION

(Hearings of the Committee on Ways and  
Means, House of Representatives,  
94th Congress, 1st Session)

December 1975

Steven C. Mayer

Prepared for the Profit Study Group,  
Profit '76, Office of Assistant Secretary  
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LOGISTICS MANAGEMENT INSTITUTE

## FOREWORD

This digest covers the principal testimony on capital formation before the Committee on Ways and Means on Tax Reform, U. S. House of Representatives, 94th Congress, 1st Session. The Hearings opened on June 23, 1975 and continued through July 31, 1975. Subjects considered in the hearings included objectives and approaches to tax reform, tax shelters, minimum tax, tax simplification, foreign income, extension of individual tax reductions provided in the Tax Reduction Act of 1975, capital formation, and capital gains and losses.

There were three phases to the hearings. The first phase, June 23, 24 and 25, consisted of panel discussions by invited tax specialists on Objectives and Approaches to Tax Reform. The second phase, July 8, served to present the views of Administration officials. The third phase, continuing from July 9 through the end of the hearings, consisted of testimony from the public on specific areas of tax reform.

The digest is arranged in chronological order. It includes only that testimony specifically directed to capital formation. In some cases, the emphasis is on the need for an increased rate of new capital investment; in others, it is on specific tax reform that would promote that new rate of capital investment. Many of the recommendations presented in the hearings are not highlighted in this Digest in the interest of avoiding repetition. These recommendations generally deal with increasing the investment tax credit, more rapid recovery of investment capital through changes in depreciation allowances, and changes in the treatment of capital gains and dividends. Summaries of the recommendations are readily available in the text of the prepared statements of witnesses.

The most comprehensive view of the capital formation question was presented in phase one of the hearings - testimony by invited specialists. The issue of the need for an

increased rate of capital investment was discussed in detail. Secretary Simon appeared twice before the committee, on July 8, and on July 31. In addition, his testimony before the Senate Finance Committee on May 7 bears directly on capital formation, and presents a detailed examination of the need for an increased rate of investment.

The remainder of the testimony presents the views of industry and citizens groups, primarily directed to specific reforms. Many of these witnesses, however, presented data on the possible shortfall of capital in the next decade.



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Witnesses covered in this digest are indexed in the chronological order of their appearance. The "Print" page numbers refer to the Committee print, "Tax Reform Hearings, Statements of Witnesses," where the complete testimony of witnesses may be found.

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Henry D. Brazer  
Professor, Department of Economics  
University of Michigan (p. 132)  
June 25, 1975

Mr. Brazer's testimony is concerned primarily with the question of the integration of the corporate and personal income taxes. On this issue, he sees a strong case for integration both on equity grounds and on the need to remove the present discrimination against equity financing as opposed to debt financing. He presents two possible means of integration: the first would allow dividends as a deduction, thus treating dividends in the same fashion as interest payments are treated now; and the second would allow a credit to the stockholder, first requiring him to gross up his dividend receipts for the amount of corporate income tax presumed to be paid on the income out of which those dividends were distributed.

In his opening statement, Mr. Brazer questions the contention that a capital shortage exists. He refers to a recent paper by Mr. Wallich (one of the panelists) which compares five studies of capital requirements. Of these five, only one, the one prepared by or for the New York Stock Exchange, suggests a capital shortage. The other four—the Duesenberry Brookings study, the study by Friedman, the Data Resources Institute study, and the National Planning Association study—all show a bottom line "Development Gap" of zero. Mr. Brazer points out that the results obtained assume an approximate balance in the budgetary position of both Federal and State Governments.

Reginald H. Jones  
Chairman and Chief Executive Officer  
General Electric Company  
Fairfield, Connecticut (p. 139)  
June 25, 1975

Mr. Jones expresses deep concern over "the shortage of capital needed to energize economic growth and development." He points out that corporate balance sheets have deteriorated dramatically and that business has drifted deeply into debt. The ratio of total liabilities to net worth (of non-financial corporations) has risen from .91 in 1955 to 1.88 in 1974. In 1965, retained earnings and debt supplied 23% and 38% of capital needs respectively; in 1974, retained earnings supplied only 5% (excluding "phantom inventory profits") and debt had increased to 54% of new funds. The primary reason for this shift has been the inability of firms to generate the cash they need from retained earnings, depreciation allowances, and new equity issues. The discriminatory tax treatment of dividends has caused businesses to move away from new equity issues and favor debt.

Mr. Jones presents the GE estimates for capital requirements through 1980 and demonstrates that without some sort of tax break, firms will not be able to raise the needed capital, unless debt is increased substantially from its already high level. He suggests several changes in the tax structure which would ameliorate the situation, including changes in capital cost recovery allowances, changes in the Investment Tax Credit, and maintenance of the foreign tax credit. In summary, Mr. Jones says, "business today does not have the capacity to find the capital investment the nation needs to energize economic growth and employment."

Joseph A. Pechman  
Director of Economic Studies  
The Brookings Institution (p. 151)  
June 25, 1975

Regarding the allegations that there is a serious capital shortage in this country, Mr. Pechman does not find the usual arguments persuasive. He feels that our capital needs can be met during the next several years without distorting the tax structure with additional measures to promote saving and investment. Mr. Pechman points out that "Contrary to the impression given by proponents of more investment tax incentives, the level of private investment during the past decade has been extremely high by any standard." He refers to the recent Bosworth, Duesenberry and Carron book (Brookings Institution, Capital Needs in the Seventies) which indicates that although capital needs will be high, they are not out of line with past savings and investment ratios in periods of high employment.

He criticizes those who point out the difference between growth and investment rates in the U. S. and other developed countries. Capital per worker is higher in the U. S. than in practically any other country. Also, as capital per worker in other countries catches up with that in the U. S., the economic growth produced by extra investment will decline. Furthermore, there are many other determinants of productivity beside investment. "In summary, there is little basis for concern about the adequacy of saving and investment in this country. There is still less basis for the argument that the U. S. tax system imposes excessive burdens on investment income."

Ross S. Preston  
Executive Director of Long-Term Forecasting  
Wharton Econometric Forecasting Association (p. 163)  
June 25, 1975

"The possibility of a capital shortage materializing as the U. S. economy expands toward its potential, during the period 1976 through 1983, is a real one." The Wharton Long-Term Annual and Industry Forecasting Model was used to assess the long term growth potential of the U. S. economy. A return to full employment in the period 1979 through 1983 will produce staggering demands for new capital. Of primary concern is the growing gap between internally generated funds and investment requirements. This gap, currently at about \$20 billion, could easily expand to the \$120 billion range as the economy reaches its potential.

Using the model, three sets of projections have been made and compared with a control solution to show how fiscal and monetary actions can have a great impact on capital accumulation over the next ten years. These scenarios are 1) a return to tight money in 1977-79, 2) a suspension of the tax credit on equipment in 1976 and thereafter, and 3) increasing tax lives for plant and equipment by 20% in 1976 and thereafter.

The results, presented graphically, are: For the three scenarios, real GNP is \$50 billion, \$32 billion and \$10 billion less than the control solution, respectively. Important impacts can also be seen for total business fixed investment, investment in utilities, housing starts, and the percentage of GNP devoted to total investment. The graphs are appended to the statement.



Henry C. Wallich  
Member, Board of Governors  
Federal Reserve System (p. 186)  
June 25, 1975

The demand for capital is likely to expand by only a small margin. Business investment, averaging about 10½% of GNP in the past, will probably have to average about 11½% in order to provide needed jobs, protect the environment, assure the health and safety of the labor force, and meet energy needs.

Mr. Wallich feels that the supply side of capital investment is the critical issue, rather than a great increase in the demand for funds. The ability of corporations to contribute to the flow of savings has been hurt. Taking demand for and supply of capital for the private sector as a whole, a deficit probably lies ahead. Therefore, the Federal Government will play a decisive role in balancing the demand for and supply of capital. A sufficient Federal budget surplus would circumvent an over-all capital shortage. If the Federal budget is in deficit, a shortage is virtually assured.

Corporate financial structure has deteriorated, and remedies are called for that will restore corporate cash flows. Most tax schemes suggested have the disadvantage of reducing the Treasury's revenue and shifting the distribution of income towards greater inequity. Mr. Wallich suggests two methods of reducing the bias in favor of debt (as against equity) that is a feature of the corporate tax system: 1) eliminate the deductibility of interest payments by non-financial corporations and thus tax net operating income, or 2) make dividends deductible, the same as interest, and thus tax only retained income, at a substantially higher rate than at present. Mr. Wallich prefers the first solution and presents a number of ideas on its implementation.

The Honorable William E. Simon  
Secretary of the Treasury (p. 1)  
July 8, 1975

The opening part of Secretary Simon's statement deals with basic tax reform legislation. Three general areas are covered; tax equity, simplification, and economic growth. Some proposals pertaining to this last category are the abolition of withholding taxes imposed on dividends and interest remitted to foreigners with respect to their investments in the U. S.; lowering capital gains taxes; imposing further limitations on Industrial Development Board financing; and the extension of DISC (Domestic International Sales Corporations).

Mr. Simon then turns to the subject of capital and capital formation. There are some introductory remarks on capital and the investment process, the general tax bias against capital, and the importance of capital for growth and increased production. A comparison of investment in the U. S. to that in other industrialized countries shows that the U. S. lags in this area and it is used as a partial explanation of our slower rate of growth. Mr. Simon then discusses savings in the U. S., explaining and showing graphically the trends in total savings, gross private savings, and personal savings, all as a percent of GNP. However, the raw savings data do not give the complete picture. Because of inflation, capital consumption allowances do not accurately reflect the cost of replacement of capital. A greater amount of savings is needed to replace old capital; consequently, an increasingly smaller portion of business savings is available for net additions to productive capacity.

In our economy, corporate profits are a major source of funds for new investment and also enable corporations to attract new investment funds in the equity and capital markets. Despite the dramatic increase in nominal profits from 1965 to 1974, the effects of inventory and depreciation adjustments

produced a dramatic overstatement of real income, and undistributed corporate profits (adjusted according to current evaluation of inventories and depreciation) have fallen significantly. Total return to capital has fallen, and debt/equity, as measured by interest paid as a percent of total net return to capital, has shown an almost incredible increase.

All these factors have hindered the ability of corporations to supply needed capital. At the same time, the capital needs for the coming decade are substantial, creating an urgent situation. Mr. Simon calls for an educational effort to alert people to the problem and the importance of capital formation. He also suggests accounting reform in addition to several tax reform suggestions. As possible solutions, Mr. Simon mentions integration of personal and corporate income taxes, liberalization of depreciation, corporate tax rate reductions, increases in the investment tax credit, and a reduction of the tax on capital gains. These are meant only as suggestions of ways to attack the problem; specific proposals are promised for the fall. Included as an appendix are several projections of investment as a percent of GNP. Graphical presentations of data are used throughout.

While this topic is not directly applicable to the discussion of capital and capital formation, it is closely related. Secretary Simon mentions DISC as a source of significant cash flow for domestic investment during periods of capital shortage. The company representatives testifying on this subject express the importance of DISC to firms involved in export business. One of the primary concerns over the possible repeal of DISC is the loss of competitive edge that many exporters would face, resulting in a decrease in foreign sales and a consequent drop in available investment capital. While this testimony does not directly address the problem of a capital shortage, the witnesses do express their concern over the supply of needed capital for investment.

American Textile Manufacturers Institute  
John M. Hamrick, President (p. 266)  
July 23, 1975

The ATMI has, within the past year, made comprehensive studies with regard to the funds needed by the industry to modernize plant and equipment, to convert electrical and steam generating equipment from petroleum to coal, to comply with air, water, and noise pollution regulations, and to meet increased working capital requirements resulting from inflated inventories and receivables. The textile industry expects a large gap to occur in the coming decade between needed capital and the capital that the industry is capable of raising under existing government policies. This gap is expected to result from the following causes: 1) the historical problems of the textile industry in raising capital; 2) continuing inflation and its effect on working capital and plant and equipment costs; 3) government regulations on energy, labor safety, and environmental protection; 4) an increasing rate of technological obsolescence; and 5) foreign competition.

ATMI believes that one of the principal solutions to the investment capital shortage problem would be a shift in Federal tax policy to promote greater savings and capital investment, and more rapid capital cost recovery. This last category includes capital cost recovery allowances for machinery and equipment for industrial buildings, and for pollution abatement and energy conversion expenditures. To stimulate savings and investment, ATMI suggests elimination or reduction of the double taxation of corporate income, a reduction in the taxation of capital gains, and continuation of tax incentives for exporters (DISC). The ATMI lists, in an appendix, other investment incentives used by various countries.



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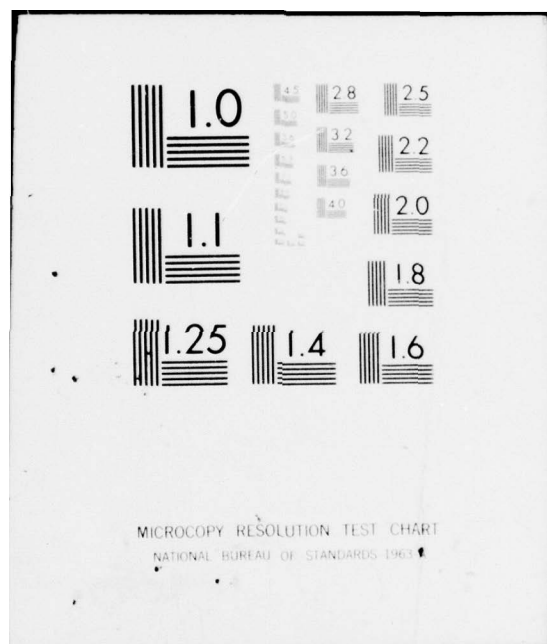
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Metropolitan Life Insurance Co.  
Charles Moeller, Jr.  
Senior Vice President and Economist (p. 305)  
July 23, 1975

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An analysis of investment requirements for the next decade and amount of saving expected strongly indicate that the needs for capital will exceed the volume of saving generated. On the demand side, capital requirements for funds are expected to be very large for the following reasons: (1) the effect of inflation causes a rapid rise in real asset prices causing replacement costs to greatly exceed depreciation allowances; (2) there is a great need for a high level of investment to meet expansionary and innovational demands and replace obsolete equipment and facilities; (3) in addition to this basic need for investment, the increased emphasis on worker safety, and air, water and noise pollution places heavy demands on new capital investment—investment that does not add to productivity; (4) due to the large backlog of housing needs and increasing construction costs, large amounts of capital will be needed for housing developments; and (5) the high level of government spending and debt financing to combat recession and its effects will compete for funds.

On the supply side, the availability of funds is expected to remain fairly tight for these reasons: (1) an easing of the rate of personal savings due to a shift of income to groups with a higher propensity to consume; (2) internally generated cash flow from depreciation charges cannot be expected to expand because of the effects of inflation, as mentioned earlier; (3) lenders and suppliers of equity funds will be reluctant to provide funds without adequate protection against inflation; and (4) flare-ups of disintermediation will occur when market interest rates rise above portfolio rates, and this results in inefficient utilization of investment funds.

Mr. Moeller makes numerous suggestions to improve the growth of savings and capital formation. He sees policies that reduce the rate of inflation as being most effective. As specific recommendations, he mentions increasing the investment tax credit, shortening the depreciable life of assets, a tax credit for net new saving, and changes in the tax treatment of capital gains, estates, and the accumulation of retirement funds.



Rubber Manufacturers Association  
Malcolm R. Lovell, Jr., President (p. 315)  
July 23, 1975

Tire manufacturing companies are in many ways representative of the entire rubber manufacturing industry and of all U. S. manufacturing companies generally.

In the past 10 years, there has been an enormous increase in the corporate debt of tire manufacturing companies. Specific figures are given. The increase has occurred because a large volume of capital investment was necessary to respond to certain major technological funds generated through depreciation allowances and additions to retained earnings.

An upper practical limit on corporate debt has now been reached by many tire manufacturing companies. Unless major relief in corporate tax laws is forthcoming, there are serious social and economic consequences ahead for the United States through the future investment-depressing effects of existing tax rules. Specific consequences regarding the tire manufacturing industry, as an illustrative industry, are discussed.

Mr. Lovell urgently recommended the adoption of realistic depreciation rules, phase-out double taxation of corporate dividends, and establishment of special investment incentives.

Proposed changes in existing tax rules as applied to DISC, so-called tax deferral on the income of overseas subsidiaries, and LDC corporations were discussed individually. Existing rules were strongly defended by Mr. Lovell.

Following the statement by Lovell, there appears in the Committee Print (p. 358) a report of a study by the Rubber Manufacturers Association (RMA) on the multinational operations of the five U. S. major tire manufacturers who

have plants and related facilities in several foreign countries. The study was prepared in response to the charge that multinational corporations are a principal force for the export of American jobs, capital and technology. The study focuses on three major points: (1) international trade and investment flows in tire manufacturing; (2) U. S. tire company investment in foreign countries; and (3) the conditions and tax climate—in the United States and abroad—under which U. S. companies can most effectively compete. The study is not particularly applicable to the question of capital formation.

Trans-Union Corporation  
Jerome W. Van Gorkam, President (p. 366)  
July 23, 1975

Mr. Van Gorkam presents an interesting problem with investment incentives and the present tax law. Due to the particular circumstances of his business, both the investment tax credit (ITC) and accelerated depreciation serve to create a disincentive to invest. Furthermore, an increase of the ITC will discourage investment even more.

Trans-Union Corporation owns over \$500 million of various assets which it leases to a broad spectrum of users. The leasing industry is highly sensitive to cash flows, and changes in the above-mentioned tax laws are quickly reflected in rental rates. These tax laws reduce the cost of ownership, and rental rates must be reduced accordingly. At the same time, Trans-Union Corporation is unable to take advantage of the ITC because of insufficient taxable profit that results from large depreciation write-offs and interest charges. Consequently, the ITC must be passed along to Trans-Union's customers, but can't be used by Trans-Union itself. This creates a powerful disincentive to invest.

Mr. Van Gorkam proposes that companies unable to use the ITC for three years after it is generated would be entitled to a refund from the Treasury for the unused portion. An even greater incentive could be provided if the credit were paid shortly after the year in which it was earned.



Richard A. Musgrave  
Harvard University  
(Invited Witness) (p. 370)  
July 23, 1975

In regard to the possibility of a shortfall of an adequate growth rate, Mr. Musgrave presents these conclusions:

- For the immediate future, including say the next three years, there will be no shortage. With recovery moving at a slow pace, present capacity plus normal expansion will be ample.
- By the end of the decade, capital requirements will call for a ratio of plant and equipment expenditures to GNP slightly (say 10 percent) above that of the average for the last decade or so, an average which in the historical perspective has been relatively high.
- At a full-employment level of income, and assuming a balanced budget, private saving by the end of the decade may fall short of the level needed to finance this rate of investment. The magnitude of the shortfall will be around 1.5 percent of the GNP.
- Due to a change in the structure of private sector saving, internal financing will provide a reduced share of the financing needed for corporate capital formation.

The problem presented here appears to be one of a potential shortage of saving, not of outlets for investment. Two methods are suggested for meeting this difficulty; one by combining public sector saving with easier monetary policy, and the other by making changes in the tax structure to raise the level of private sector saving.

Mr. Musgrave also discusses the distortion effect of inflation on profits, and the recent trend toward debt financing due to discrimination against equity capital. He then summarizes some points on the integration of the corporate and personal income taxes.



Ad Hoc Committee for an Effective  
Investment Tax Credit  
George A. Strichman, Chairman (p. 1)  
July 28, 1975

SUMMARY STATEMENT

Need for Business Savings and Investment

The United States has the lowest rate of private sector investment in the industrialized world. Today's principal economic concern should be the formation of sufficient capital to meet projected requirements for job-producing investments in United States business and industry. Such requirements are estimated to be as high as \$5 trillion between now and 1985. Based on present national trends in savings, there will be a shortage of investment capital by 1985 in the range of \$575 billion—or over 10 percent of total requirements. It is significant that the United States has never achieved a rate of savings adequate to meet this deficiency. The need for public policy changes to emphasize savings and investment is apparent.

Role of Business Capital Recovery in Total National Savings

Since World War II, the contribution of business savings to the nation's total savings has risen from 48.1 percent of the total in 1947 to 65.9 percent in 1974. Capital recovery provisions of the Internal Revenue Code accounted for 58 percent of total business savings. Therefore, such cost recovery factors are immensely important to the level of national savings and investment.

International Comparison of Capital Recovery Systems

Relative to other industrialized nations, the United States capital recovery system (even with a 10 percent investment tax credit) has consistently ranked at or near the bottom. Other nations have recently taken steps to stimulate savings, investment and national productivity by further liberalizing their capital recovery systems. Specific examples are cited, beginning on page 12 of the Ad Hoc Committee's prepared statement.

Historic Effects of the Investment Credit and Depreciation Provisions on Investment, Employment, Productivity and Tax Revenues

The correlation between the applicability of effective cost recovery provisions and such leading economic indicators as savings, investment, employment, productivity and Federal tax revenues is striking. The prepared statement cites changes in these indicators corresponding to congressional actions affecting capital recovery.

Conclusion

All indicators point to the need to restore a proper balance between savings and consumption in United States tax policy. Such a balance would provide the long-term growth needed to provide sufficient jobs for a growing labor force, and the improved productivity needed to assure rising real wage rates and long-term price stability.

American Council for Capital Formation  
Charles E. Walker, Chairman (p. 121)  
July 29, 1975

SUMMARY STATEMENT

Earlier witnesses have made the case for tax measures to foster capital formation in the United States. Therefore, my testimony briefly examines some widely held views that impede enactment of such legislation; answers the arguments of earlier witnesses and others who oppose such measures; and presents a suggested agenda for action.

As to the "myths" that abound with respect to the Federal income tax system, three of the most important are: (1) the rich get away with murder when it comes to paying Federal income taxes (the system "is stacked against the little man"); (2) corporations can be taxed without hurting people; and (3) there are \$91 billion in "tax loopholes" just begging to be closed. All of these views are wrong.

Similarly, the arguments made against tax measures to stimulate capital formation are open to serious question.

- Opponents state that there has been no capital shortage, there is none now, and there won't be one in the future—but they're wrong.
- Opponents state that the tax system already heavily favors capital formation—but they're wrong.
- Opponents state that full employment will automatically generate adequate capital formation—but they ignore the inflation that the level of unemployment they advocate will generate.
- Opponents state that the case for capital formation is no more than a repeat of the "trickle-down theories" of the past—but this attack is rhetorical, not substantive.



- Opponents state that investment incentives merely pull funds from one investment use to another—but they overlook the significance of their own conclusion: namely, the pull of resources from consumption and non-productive investment into productive investment is precisely what investment incentives (such as the Investment Tax Credit) are designed to do.
- Opponents state that "we can't 'afford' to cut taxes because of the revenue losses involved"—but they ignore history; such cuts tend to generate revenues, not reduce them.

Tax measures to promote capital formation include early steps to integrate the corporate and personal income tax; make permanent a 12 percent, refundable Investment Tax Credit, with no strings attached; simpler and more effective capital recovery allowances; a more equitable capital gains rate; and retention of provisions of law relating to income earned abroad by U. S. corporations and their affiliates, Domestic International Sales Corporation.



PARTIAL SUMMARY

By the early 1980s, the industry estimates the need for 30 million tons of additional raw steel production capacity. When operational, this new capacity will require 85,000 to 90,000 full time employees for mining through steel finishing operations and a substantial number of job opportunities for supplier and other types of ancillary industries. Because they are basic to most other major industries, steel products also support a substantial volume of employment for the entire country. Finally on the employment point, construction and installation of the facilities to produce this additional steel requirement, plus the facilities required to maintain present production capacity will entail substantial immediate employment requirements.

For the future, the steel industry faces a substantial task in providing the steel products and the employment opportunities required by our growing economy. If our economy is to continue to grow at a healthy rate, a viable steel industry is mandatory. Meeting the increased demand of 30 million tons of additional raw steel capacity, plus replacing and maintaining present productive capacity, and meeting growing environmental requirements will require expenditures of approximately \$5.0 billion per year in 1975 dollars over the next six to nine years. This figure is almost three times the average amount of capital expenditures made during the prior ten-year period, a period during which there was practically no net addition to raw steel capacity. In contrast to these expenditure requirements, in 1973 and 1974, its highest volume years, the industry generated an average annual net cash flow of approximately \$2.8 billion. Assuming this profit performance can be repeated consistently in the future and, also, that the industry maintains the higher debt

to equity ratios of recent years, a capital shortfall in the magnitude range of \$1.5 billion per year is apparent.

The primary effort for reducing this projected shortfall must be directed toward continued improvement in the industry's profitability. That improvement began in 1973 and 1974 when, after several years of returns at or near the lowest levels of all industrial groups, the steel industry achieved a return on equity equal to the average of all manufacturing industries. Further improvement will require realistic government policies which avoid price controls and which help counteract noncompetitive practices of foreign steel producers supported by their home governments. The achievement of reasonable rates of return will maximize borrowing opportunities and, for the long-term, could permit the industry to obtain some part of its short-fall in funds from the equity market. These efforts at improving cash flow must be supported by Federal income tax policies that specifically encourage capital formation, particularly for those industries such as steel which require significant amounts of capital.

Association of American Railroads  
Carl V. Lyons, Sr., Vice President (p. 172)  
July 28, 1975

The railroads are highly capital intensive, and their need for capital is at this time even heavier than normal. The increased emphasis on coal production will place heavy loads on track and equipment. New capital is also needed in order to take advantage of technological advances brought about by the advent of computer technology. Advances such as automatic car identification and location systems, and advanced signal and communications systems can significantly increase productivity.

The investment tax credit, designed to encourage capital investment, cannot be fully utilized by many railroads because they are unable to generate the necessary amounts of profits and tax liabilities. Inability to generate internally the needed capital has resulted in declining working capital and rising debt. A refundable credit would ensure railroads of the advantages of favorable cost recovery. Loss and marginal operations would, for the first time, be able to benefit from the tax incentive and expand their investment accordingly. The railroads currently have accumulated some \$320 million of credit that will expire by 1981 if not applied against a tax liability. The Association of American Railroads strongly recommends that the refundable credit and rapid amortization procedures be adopted.

Air Transport Association of America  
Paul R. Ignatius, President (p. 179)  
July 28, 1975

The airlines are also confronted with the problem of unused investment tax credits. Since the credit was introduced in 1962, the airline industry has invested over \$15 billion in capital equipment. This level of investment has generated approximately \$1 billion of tax credit. Due to deficiencies in the investment credit mechanism, however, less than one-third of these credits have been utilized.

The capital needs of the airline industry over the next five years are projected to be, at a minimum, \$6 billion for the acquisition of aircraft and related equipment. Retained earnings are inadequate for this amount of investment, and financial institutions are hesitant to lend money to the airlines. Also, the equity markets are not likely to be a significant source of funds.

If the airlines are to meet their capital requirements for new investment in the coming years, it is important that they recover the unused tax credit and be able to count on full tax credit for future investment. The Air Transport Association of America strongly recommends the enactment of H.R. 8670 which would provide for these needs.



Public Citizen Tax Reform Research Group  
Robert M. Brandon, Director (p. 195)  
July 28, 1975

This testimony is one of the few that dispute the existence of a capital crisis or the need to revise the tax code to encourage capital formation. This is not the first time the investment community has raised the issue of capital shortage and demanded larger tax subsidies to avert ruin. These alarms are typically sounded during periods of inflation but capital shortages have failed to materialize.

Claims that there is a shortage of capital ignore the basic structure of our economic system. There is always a gap between what the country would like to do and what it can afford to do. The allocation of capital is determined by how much people are willing to pay for it. This assumes that there is a limited supply of capital for which people must compete. We are not in a different position today than we have been in the past. The rate of personal saving has remained constant for decades. The portion of GNP that goes to business plant and equipment investment has been increasing over the last decade.

Mr. Brandon takes issue with the notion that capital is overtaxed in the present system. The 69% corporate tax burden referred to by Secretary Simon does not take into account the deflated debt obligations and deflated taxes paid. Also, the appreciation of assets due to inflation goes untaxed, and is not taken into account in Secretary Simon's estimate.

The rising use of debt does not reflect a lack of available capital. Rather, it is a result of a tax bias toward debt—interest is deductible, dividends are not—which makes a debt financing in many cases cheaper. Also,

debt financing has the advantage of not diluting per share earnings of existing equity. There are other reasons for the increase in debt but the tax bias is one of the most important factors.

Comparisons with other countries are not applicable to the question of capital formation in this country. The technologies and economies are so different that meaningful comparison is not possible. Also, the studies on future capital needs by the Chase Manhattan Bank and G.E. are based on sheer guesswork and cannot be considered authoritative.

Mr. Brandon supports the idea of a free economy. The tax structure as it now stands introduces many distortions to the capital markets. Before more distortions are created we should look at the relative claims of different segments of the economy.

Allied Chemical Corporation  
Bernard Larner, Corporate Vice President (p. 374)  
July 28, 1975

Mr. Larner makes a short presentation in support of the Domestic International Sales Corporation (DISC) and Western Hemisphere Trade Corporation (WHTC) export tax incentives. These incentives are important to the export trade of Allied Chemical in a very competitive environment. The DISC and WHTC export incentives help create jobs in the United States and help prevent the export of jobs.

Cantor, Fitzgerald & Company  
George V. Delson, Executive Vice President (p. 378)  
July 28, 1975

Mr. Delson recommended that the capital position of companies engaged in the securities industry be strengthened by providing more after-tax net profit, and permitting the retention or accumulation thereof.

With respect to attracting capital, Delson's comments and recommendations have the objective of providing equality in the tax treatment of different investments and activities, providing incentives for continued confidence in our capital markets, and sustaining capital raising capabilities.



Smaller Business Association of New England  
Oliver O. Ward, President  
and  
Edward H. Pendergast, Jr., Past President (p. 394)  
July 28, 1975

The problem of how and where to raise investment capital is for the small and medium size business considerably more severe than for the large corporation. These firms are unable to tap many of the money markets available to large firms. Commercial paper, debenture offerings, and long-term loans are not available to small business. Equity and debt markets are severely limited, leaving retained earnings as the principal source of funds.

A better tax climate is needed so that small business will be able to finance investment from retained earnings. Proposals include 1) raising the surtax exemption to \$100,000., 2) moderation of the corporate estimated tax payment schedule, 3) liberalized depreciation, 4) retention of DISC and 5) revised capital gains structure to encourage long-term direct investment.

Data on effects of various corporate tax rate reductions, financing of small companies, and the history of income tax on corporations is appended.

American Machine Tool Distributors Association  
Richard B. Robinson, President (p. 1)  
July 29, 1975

SUMMARY

The tax structure unduly encourages consumption and spending and discourages investment in industrial facilities required to increase productivity.

As compared with other industrial nations, the United States now has the lowest rate of productivity increase, the lowest rate of capital investment in relation to GNP, and the highest level of industrial obsolescence. Those who minimize the need for investment and claim "the United States has plenty of industrial capacity" ignore the fact that much of it (more than any other industrial nation) is obsolete, high cost, non-competitive capacity. Shortage of capital and lack of investment threatens the economic health of the United States and its ability to compete effectively in world markets.

The economic health of key industries like the machine tool industry is also threatened. All U. S. industry and its defense and commercial business is dependent on the machine tool industry for increased production and increased productivity. Economists recognize the machine tool industry as a barometer of the health of all industry. Statistics show that the health of this industry and those dependent upon it is not good. New orders for machine tools reached their lowest level in many years at the beginning of 1975.

For the first time in history, the U. S. machine tool industry is no longer the world leader in machine tool production. West Germany has moved into the Number ONE position ahead of the United States, with the Soviet Union and Japan close behind. All the statistics showing the deteriorating position of U. S. industry have serious implications in terms of our competitive trade position and our relative defense capability.

The United States has lower tax allowances for depreciation and related capital costs than any other industrial nation. These other nations have adopted capital recovery tax allowances that will insure adequate capital investment. The United States has not. The accelerated methods should continue to be available to recognize the loss of value and obsolescence in the initial period of use.

The investment credit should be made a permanent part of the tax structure to recognize the inadequacy of Section 167, depreciation allowances to take fully into account the impact of obsolescence and inflation on the cost of replacement.

Associated Equipment Distributors  
Johnnie M. Walters, Special Counsel (p. 20)  
July 29, 1975

AED's members, being directly involved with the construction industry—a basic industry of the nation—are vitally concerned with proposals for tax reform particularly proposals bearing on capital formation and tax cost of conducting business.

AED strongly urges the committee to examine diligently the numerous proposals it receives that would encourage the formation of the capital needed now and in the foreseeable future to meet the increasing demands and needs of the world. In determining which proposals should be adopted, we know the committee will pay particular attention to many relevant factors, e.g., revenue costs, equities, overall effect on the internal revenue system, etc. AED strongly urges the committee to draft amendments that not only will accomplish the goal of capital formation, but also will simplify rather than further complicate our tax laws. With that in mind, as well as the primary goal of capital formation, AED recommends the following:

- Taxpayers be allowed to recover capital investments on a straight line method over substantially shorter periods (three to ten years) than now permitted under the outrageously outdated useful life guidelines.
- The corporate surtax exemption of \$50,000 be increased to \$100,000.
- The double taxation of corporate earnings be eliminated.
- The tax on capital gains be lowered by rate reductions reflecting the length of time an asset has been held.
- If depreciation allowances are not substantially liberalized, the investment tax credit be continued at a meaningful rate, without limitations based on tax liability.



Machinery Dealers National Association  
Sidney Mandell, President (p. 34)  
July 29, 1975

This statement describes the need for increased incentive for the purchase of used equipment to help small business. The MDNA proposes an expansion of the investment tax credit to achieve this end.

The purpose of the investment tax credit is to stimulate capital investment. By investing in used machinery and equipment, four beneficial results are obtained:

- the competitive position of small businesses who are dependent upon used machinery for plant modernization is improved
- such a credit stimulates employment in the most labor-intensive portion of the capital equipment industry
- such a credit is anti-inflationary
- the position of the U. S. balance of trade is improved

Of primary importance is the \$100,000 limitation on used property which should be removed on a permanent basis. In addition, the MDNA makes several recommendations for tax changes in the areas of investment credit and depreciation allowance.

Appended to Mandell's statement is a short analysis of plant size, indicating that small plants generally have a higher concentration of more up-to-date equipment.

National Machine Tool Builders Association  
Ralph E. Cross, President (p. 50)  
July 29, 1975

The machine tool industry is made up primarily of small businesses. The industry itself is also small yet is one of the most essential to American industry. All metal products are made on machine tools, including machine tools themselves. The 1971 7% tax credit did bolster the economy through 1974 by increasing jobs, productivity and exports. The impact of price controls and inflation finally nullified the effect of the credit in 1974. There is a close correlation between domestic tool orders and the availability of investment credit and depreciation allowances. This relationship is presented graphically along with data on net income, gross fixed capital formation as a percent of GDP, productivity, and allowable cost recovery.

Appended to this statement is a paper by Joel Barlow titled "Inflation, Phantom Profits and Tax Bias." This paper criticizes the restrictive capital recovery tax policy that has played an important role in the deep recession and double-digit inflation. Mr. Barlow gives some background on the tax bias against capital and makes a case for industrial growth based on increased investment credit and asset depreciation range (ADR). Data is used to support several important points.

National Tool, Die & Precision Machinery Association  
Phillip R. Marsilius, Chairman  
Industry Task Force on Tax Reform (p. 110)  
July 29, 1975

Mr. Marsilius gives a brief description of the tool and die industry indicating its importance to many other industries in our economy. He then presents and discusses proposed tax changes that would stimulate capital investment in the tool and die industry. The proposed changes are as follows:

- establishing a 15% investment tax credit and making permanent the \$100,000 limit on used property qualifying for the ITC
- requiring a statutory ADR 40% range
- increasing the corporate surtax exemption to \$100,000 and establishing a graduated tax structure for corporate earnings
- increasing the amount of accumulated earnings tax credit to \$250,000
- allowing 3-year fast depreciation for pollution and environmental control equipment
- allowing corporate tax deductions for preferred stock dividends
- retaining DISC
- adjusting capital gains taxes

George F. Break (Invited witness)  
University of California (Berkeley)  
Department of Economics (p. 122)  
July 29, 1975

Mr. Break's testimony is concerned with those changes of the tax structure that will provide for better integration of the corporate and personal income taxes. He does not discuss the need for new capital formation.



## Committee of Publicly Owned Companies

C. V. Wood, Jr., President  
McCulloch Oil Corp. (p. 137)

Fred A. Simpson  
Senior Vice President  
Baker Oil Tools (p. 151)

Leonard Marks, Jr.  
Executive Vice President  
Castle and Cooke (p. 154)

Stephen A. Furbacher  
President  
Neptune International Corp. (p. 159)

Mr. Wood presents the basic problem faced by all of the companies on the committee—a severe lack of available capital. These companies have borrowed as much as their level of equity capital can support—banks are unwilling to provide more debt capital except at unreasonable interest rates. In summarizing the data on capital shortage, Mr. Wood points out:

- In 1960 the ratio of business debt to equity was 24%. Now it is 44%.
- In 1972 1,383 new issues of common stock were marketed. During the first six months of 1975, the figure was 106.
- Since 1960 the United States has had the lowest level of capital investment of all the major industrialized nations.
- By 1975 14.8 million new jobs will be required to accommodate new entrants to the work force.

The committee recommends several tax changes that would stimulate capital investment. They are included in a summary sheet at the end of the statement (p. 143).

Mr. Simpson points out that in calendar year 1974 only 154 publicly owned companies were able to issue equity, as opposed to 411 in 1973, and 1,383 in 1972. He expresses concern over the tremendous capital needs of the energy industries in the decade ahead.

Mr. Marks discusses the dramatic increase in debt financing due to greater security and higher return on debt instruments. This problem has greatest effect on small companies who are unable to support large quantities of debt, and whose costs of debt financing are considerably higher.

Mr. Furbacher sets forth the problems of firms operating in the area of environmental control of air and water resources and solid waste disposal. It has been estimated that capital requirements for control of water pollution alone will be over \$200 billion.

The major points of the committee are summarized as follows:

- The present climate for capital formation in our economy is not satisfactory, and remedies must be provided.
- Special attention is required in the equity financing area, especially because of the needs of smaller enterprises.
- Specific reforms—such as institution for individuals of a downward sliding tax scale for capital gains, and tax exemption for cash dividends they reinvest in a corporation—would be beneficial.
- Failure to retain and extend current provisions of the Western Hemisphere Trade Corporation laws will make U. S. companies far less competitive abroad.

Mead Corporation  
James W. McSwiney  
Chairman of the Board (p. 161)  
July 29, 1975

Mr. McSwiney, Chairman and Chief Executive Officer of Mead Corporation, describes the increased costs and higher risks inherent in capital intensive industries such as pulp and paper. For example, to build a mill representing a 25% increase in Mead's white papermaking capacity today would require an investment equal to 80% of the net assets in its entire white paper system.

If companies like Mead are to make investments to create jobs and economic growth for the nation, elements of our tax structure which inhibit capital formation must be corrected. These include aspects of depreciation rules and the treatment of dividends compared to interest.

Availability of cash is more important than reported earnings when it comes to consideration of investment. Tax legislation must recognize this clearly if it is to encourage industrial growth.

A key concept regarding depreciation rules is to begin depreciation of an asset when construction begins. This should be computed on the total cost of the project. The effects would be to free up additional cash at the crucial point and to reduce the risks of investment.

All existing depreciation schedules should be modified to permit realization of the full tax benefits in five years after construction begins. This could be phased in by 1980. The investment tax credit should be increased to 12% and made permanent.

Present tax rules penalize the issuance of equity and have led to serious increases in debt/equity ratios. Both interest on debt and dividends paid

represent legitimate costs of using capital. Tax law should treat both equally. Tax deductions should be allowed for dividends paid, up to 50% of a corporation's earnings. This would eliminate double taxation of dividends, encourage capital formation, increase total capital, and provide corporations an opportunity to upgrade their debt positions.

While the proposals may entail some initial loss of tax revenue, this effect could be minimized by phasing some of these programs in over the next five years. Construction activity and new jobs created by greater capital formation and the continuing higher level of industrial activity that results would soon produce net revenue gains.



National Association of  
Small Business Investment Companies  
Walter B. Stults, Executive Vice President (p. 178)  
July 19, 1975

SUMMARY

Extension of Provisions of Tax Reduction Act of 1975

Since the individual and corporate tax reductions are most helpful to small business, NASBIC supports strongly the permanent extension of these items.

Capital Formation

For small business, retained earnings are by far the most significant portion of capital formation. Tax law should recognize this. Public securities markets are unavailable to small business. Small business investment companies (SBICs) are now a significant source of equity funding for new and small businesses. The Internal Revenue Code must be amended to permit SBICs to be more effective in channeling equity capital to independent business.

Internally generated funds have represented the great portion of all capital formation for business, especially for young and small firms. These funds fall well short of providing needed dollars today because of the heavy bite of Federal tax laws and the higher costs of equipment needed to run a business. The SBICs are, by the very nature of their operations, in a unique position to view the impact of capital shortage. Data is presented on number and dollar value of new stock issues, gross proceeds of corporate issues for different groups, and the financial position of the SBICs over the past several years. While the SBIC program has been a boon for those firms that have received capital and management assistance from SBICs, the returns received

by shareholders in SBICs raise questions as to the success of the program to those who invested in it.

Since SBICs are a major source of capital for new and small businesses, it is important that incentives be provided to encourage growth so that new, increasing demands for capital can be met.

Covington & Burling  
Washington, D. C.  
Joel Barlow (p. 201)  
July 29, 1975

The evidence presented at these hearings is conclusive that capital cost allowances, limited as they presently are to a temporary investment credit due to expire in 18 months, and an ADR system under constant threat of repeal will not stimulate the capital investment so urgently needed to increase productivity and provide jobs.

The cumulative effect over the years of inadequate tax depreciation allowances has so eroded profits that many companies have in effect been forced to minimize depreciation and maximize profits for financial reporting purposes in an effort to maintain their traditional profit levels. The Secretary of the Treasury has described this as "public relations bookkeeping" and both he and the business community have criticized this bookkeeping.

This practice has been entirely counterproductive and quite undefensible. It has caused a further erosion of profits and cash flow so essential to capital investment. It has resulted in unnecessary refunds of "excessive profits" in renegotiation, and in increased wage demands and payments with their adverse effect on productivity and inflation.

This "public relations bookkeeping" has made business vulnerable to the charge that it does not practice what it preaches, and it has been prejudicial to the enactment of the capital cost allowances business seeks.

The solution lies in (a) recognition by accountants that they must put an end to this "public relations bookkeeping" that rejects tax depreciation in favor of long-life straight line depreciation; and (b) the enactment by the Congress of adequate capital cost allowances.

Unless business and its accountants take the initiative in reversing the trend to long-life straight line accounting for financial purposes, Congress may well adopt a conformity rule. This would create a chaotic situation, particularly in a period of depressed earnings, unless the rule were to be phased in on a partial basis. Companies who need it most would be shut off from full tax depreciation.

Businessmen and accountants should support the ADR system which has a rational basis because it can be utilized for financial reporting. They should go slow in pressing for capital cost recovery systems with arbitrarily determined rates which cannot be utilized for financial reporting. They would invite the enactment of a statutory conformity rule, and would be more vulnerable politically to reduction and repeal than depreciation allowances with a rational basis.

Businessmen and accountants will jeopardize the availability of the investment credit if they look upon the increased cash flow it provides as a substitute for depreciation cash flow, and as a basis for continuing the practice of understating depreciation for financial reporting purposes.

It is futile for business to seek a permanent investment credit. It can never be permanent while Congress sits. The best that can be expected is a Congressional commitment to a fixed rate for a stated period. Congress should make this commitment if it expects the investment credit to encourage long-range investment.



Kelso Bangert & Co. (p. 220)  
Norman G. Kurland, Counsel  
July 29, 1975

The U. S. economy needs \$4.5 trillion in capital investment between 1974 and 1985. Of this amount, business capital needs are upwards of \$3 trillion.

Traditional methods of financing new capital formation—whether through internally generated funds or through conventional debt financing—create no new capital owners. New stock issuances make up less than 5% of all capital needs, and because they require cash outlays, cannot be afforded by the 95% of Americans who own little or no stock today. Conventional financing necessarily makes the rich richer.

The testimony of Kelso Bangert & Company, an investment banking firm headed by Louis O. Kelso and represented in Washington by Mr. Kurland, is aimed at encouraging the use of Employee Stock Ownership Plans of "ESOPs" as an alternative method of financing requirements of U.S. corporations. ESOPs, which have been implemented by over 150 corporations, are the only known method in the field of corporate finance that create low-cost capital while simultaneously creating new capital owners.

Leslie H. Baker, Jr. (p. 271)  
Fort Worth, Texas  
July 30, 1975

A large measure of the economic distress of the United States is the direct consequence of a mistake in measuring capital gain and loss in Federal income tax schedules. The injury appears as a direct property tax on capital expenditures. It has diminished the national capital base in a sum not less than 115 billions of dollars and reduced net income tax revenue by almost 30 billions of dollars.

A second factor contributing to the recession and inflation is an additional loss of capital resulting from the deferral of capital expense deductions to the years in which the related asset is sold.

Amendment of the Internal Revenue Code to end the mismeasurement, and to begin current capital expensing will contribute to real capital growth and, over the long term increase Treasury revenue in a non-inflationary mode.

Eugene M. Lerner (P. 304)  
Northwestern University  
Graduate School of Management  
July 30, 1975

Mr. Lerner presents two proposals to stimulate capital spending. They are 1) permit dividends on preferred stock to be tax exempt, and 2) permit investors to defer payment of taxes on dividends they choose to reinvest in a company until the shares so acquired are sold.

Mr. Lerner uses utilities as a case example to provide background for his remarks. The trend of interest coverage (the ratio of profits before interest and taxes to total interest payments) has shown a marked decline in the past 6 years. This is but one indicator of the deteriorating financial health of the utilities. The utilities could today be characterized by weak balance sheets and huge investment requirements. The two proposals would help to alleviate the present financial difficulties by providing incentives for raising new equity capital.

The statement includes data on internal sources vs. internal uses of funds and times interest earned for three samples of companies.

Honorable William E. Simon  
Secretary of the Treasury (p. 1)  
July 31, 1975

The Committee on Ways & Means concluded its hearings with the testimony of Secretary Simon. Secretary Simon presented his recommendations along with a statement identifying the need for increasing the rate of new capital investment, and the tendency of the present tax system to be biased against capital. On this point, Simon referred to his statement before the committee of July 8, 1975 where he dealt with the questions of savings and capital investment in relation to the tax structure in greater detail.

A recapitulation of economic points on the need for more savings is presented on p. 5 of the statement. The savings question was covered in detail in a statement before the Senate Finance Committee on May 7. A significant increase in the rate of saving is called for in order to maintain the present rates of economic growth and prosperity.

Simon's proposals embraced two general areas: A National Program for Personal Saving; and a Proposal to Eliminate the Double Tax on Distributed Corporate Benefit. The latter met with disapproval by some members of the committee, particularly Representatives Burke, Ullman and Stark, who took issue on the question of the distribution of the tax burden. Representative Stark was especially vehement in his criticism of Simon's proposals, and charged that the Treasury study demonstrating the need for new capital investment (presented May 7) was poorly executed and inconclusive.



**APPENDIX C**  
**DEFENSE PROFITS AND PROFIT STUDIES:**  
**CONGRESSIONAL CRITICISM AND CONCERNS**  
**1968-1975**

**March 1976**

**Otto B. Martinson**  
**Thomas M. O'Hern, Jr.**

**Prepared for the Profit Study Group**  
**Profit '76, Office of Assistant Secretary**  
**of Defense (Installations and Logistics)**

**LOGISTICS MANAGEMENT INSTITUTE**

## FOREWORD

This document identifies and classifies those Congressional comments and criticisms made most frequently with respect to defense industry profits and profit studies. Such remarks have been collected primarily from Congressional hearings conducted during the period 1968 to 1975. The purpose of this document is to provide a compilation of these Congressional views for the Defense Department to consider in its study to promulgate a new DoD profit policy.

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## AN OVERVIEW OF MAJOR ISSUES

During the course of some Congressional hearings conducted between 1968 to 1975, there have been a number of important issues raised with respect to defense industry profits and profit studies. The summary presented below highlights some of the major concern and criticism reflected in these issues. To obtain an indepth view of the issues, the indices are provided so one can refer to the Congressional committee prints or original texts for the exact wording and context.

### There is a Lack of Profit Information Concerning the Defense Industry.

It is argued that DoD lacks an effective profit reporting system. This is due to DoD's inadequate collection of data on either firm fixed price contracts or subcontractors. It is also contended that no one outside of a company knows the actual costs and profits of a company; that costs, performance, and status of weapons systems are unknown; and that DoD profit data should be made public.

### Prior Profit Studies are Unreliable and Contradictory.

The major profit studies have been conducted by Logistics Management Institute (1967, 1969, 1970), General Accounting Office (1971), Professor Murray L. Weidenbaum (1968), and various DoD in-house groups. A number of factors contribute to the numerous contentions that the studies were neither objective nor comprehensive. The most frequently expressed areas of concern revolve around the unreliability of the questionnaire approach. The questionnaire approach was criticized on numerous counts:

- In how the original sample size and companies were chosen. Questions were raised as to whether there was a systematic distribution of various firm sizes; whether subcontractors were omitted; and whether the firms were selected on amounts of contractor dollars (and, if so, dollars for how many years?).
- Allowing the solicited companies the option of responding or not responding. It was said that those companies making large profits did not respond.
- Of the sample that do respond, the companies provide inadequate representation of the defense industry. There were claims that certain hardgood categories were overrepresented.
- Contractor responses were unreliable. Many speakers held the view that there is a definite divergence between audited and non-audited data.
- There is a need to know actual profit rates according to industry, contract type, and individual contracts. Consolidated figures are said to be highly misleading.
- Commercial profits are not a valid basis for comparison.



#### Defense Profits are Being Hidden.

It is claimed that large contractor profits are being hidden by the way a company charges its overhead costs, by the way component parts are priced, and by the manner in which intracompany profits are handled. It is also charged that another source of additional profits are contract change notices that are either unnecessary or nonexistent (the latter being mere bookkeeping entries intended to support claims for additional reimbursement).

#### There is a Need for Meaningful Competition.

It is asserted that competition has been replaced with negotiation. It is argued that DoD possesses a long term trend away from competitive bidding, and that this trend has tended to favor larger firms by stifling competition from smaller firms.

#### Defense Profits Have Been Increasing.

It is alleged that profits being paid on defense contracts have been increasing substantially. Accusations are made that profits have increased on all types of contracts (implying higher profits for the same amount of risk) and that the Weighted Guidelines have been a principle cause for these higher profits.

#### Providing Government-Owned Equipment Results in Abuses and Unfair Advantages.

It is contended that private rather than government investment should be stressed. This is due in part to DoD's alleged negligence in its procurement management practices. Related to this line of argument is the assertion that contractors using government-owned equipment and property accrue unfair advantages over their competitors in both defense and commercial work. There is also concern that both the amount of government-owned equipment outstanding and the percentage of contractor use of government-owned equipment employed for commercial work are unknown.

#### Contractor Capital Investment Should be Emphasized.

It is argued that current policies reward inefficiency, that cost-based pricing should not prevail, and that profit on cost results tend to be misleading. Return on investment is said to be a contractor's fundamental measure of profitability and likewise should be emphasized by the Defense Department.

#### Defense Contractors are Inefficient.

Basically the allegations attribute contractor inefficiency to DoD's lack of concern for profits, contractors having no incentive to perform efficiently under current policies, and DoD's easy tolerance of contractor mistakes. Examples of this latter argument frequently involve contract change notices, overruns, letter contracts, and cancellation of programs for government convenience (as opposed to contractor default).

### There is a Need for Uniform Accounting Standards.

It is claimed that lack of accounting standards represents a major obstacle in determining actual defense profits. While the profit rate is designated at the time a contract is negotiated, the actual profit cannot be known and verified unless an expensive time-consuming audit is conducted to reconstruct a contractor's books. This is because contractors are not required to maintain books and records on a by-contract basis. The contention is also raised that uniform accounting standards could save contractors, as well as the government, money.

### The Truth-in-Negotiations Act is Ineffective.

It is asserted that the Truth-in-Negotiations Act is not being enforced, does not prevent overpricing, and as a whole is ineffective. These assertions arise from observations that in many instances the act is waived when it should not be and determinations are made under the guise of adequate competition when in fact there is inadequate competition.

### The Renegotiation Act is Ineffective.

The Renegotiation Act is said to be the semblance but not the substance of effective renegotiation. This is due to the loopholes in the Act, its use of IRS definitions, and the general problem of lack of enforcement by the Renegotiation Board. Related to this topic, is the argument that these factors greatly limit the validity of generalizations concerning profitability of defense business taken from the Board's reports.

### Salient Profit Study Points

The statements and testimony indexed herein suggest that any profit study should pay special attention to the following areas:

- Objectivity of the premises and methodologies used in the study. What were the underlying assumptions of the study? What justification was given for such assumptions? Was a study approach taken so as to minimize the bias of any conclusions?
- Representation of the defense industry in the study sample. How were the firms in the original sample chosen? Did the firms that responded adequately represent the defense industry with respect to company size, defense dollar volume, subcontracting, and hardgood categories?
- Accuracy and limitations of data obtained from industry sources. Was an audit performed on all information received? Was there a visible pattern for those companies that did not respond to the questionnaire? Did the use of profit centers bias the results? What are the shortcomings of the data?
- Concealment of meaningful variations in statistical averages. Are the consolidated figures misleading? Were profit figures calculated according to industry, type of contract and individual contracts? Was an adequate time span of a firm's data used in the study?

- Variables used in calculating rate of return figures. What variables were used in the rate of return calculations? What justification is given for the inclusion or exclusion of possible variables? What comparisons can be made between different rate of return calculations?
- Whether commercial versus defense profits provide a valid basis for comparison. Do profits of firms provide a valid basis for comparison? Were other components of a firm's profitability investigated?



## HOW TO USE THE INDICES

The three indices included in this document provide a mechanism for locating comments and discussion pertaining to a particular aspect of defense industry profits. The page citations in the indices are the page numbers from the original texts. (Note: Only the first page of discussion is referenced despite the fact that the comment may continue on subsequent pages.)

The Index of Sources Cited lists the resource materials that were used in constructing this document. The materials are arranged according to their source, with the alphanumeric notation in the left-hand column being the identification codes. The letters, H, J, S, and M correspond to the source, namely House Committee, Joint Committee, Senate Committee, and Miscellaneous, respectively.

The Index of Statements by Subject Matter permits the reader to focus on discussion pertaining to a particular facet of profits. It cross-references the index of resource materials according to its subject matter and source. Under each subject matter section are various key phrases. The numbers directly opposite such phrases refer to sources where discussion regarding that subject can be found. For example, "J6(572)" means the information can be found in source J6 (see Index of Sources Cited) beginning on page 572.

The Index of Statements by Speaker categorizes the subject matter according to speakers. The index cites the speaker, the topic area, and the source where the remarks can be found. The procedure for using this index is similar to the directions given for the previous index, namely, 1) locate the speaker; 2) choose the appropriate topic area; and 3) note the source and page numbers.



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- H-1 Committee on Banking and Currency. To Renew the Defense Production Act of 1950, as Amended, Hearings before the Committee on Banking and Currency, 90th Cong., 2d sess., 1968.
- H-2 Committee on Appropriations. Department of Defense Appropriations for 1969 (Part 6). Hearings before a Subcommittee of the Committee on Appropriations, 90th Cong., 2d sess., 1968.
- H-3 Committee on Government Operations. Commission on Government Procurement, Report of the Committee on Government Operations, 91st Cong., 1st sess., 1969.
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- H-5 Committee on Appropriations. Department of Defense Appropriations for 1972 (Part 8). Hearings before a Subcommittee of the Committee on Appropriations, 92d Cong., 1st sess., 1971.
- H-6 Committee on Government Operations. Defense Industry Profit Study of the General Accounting Office. Hearings before a Sub-committee of the House Committee on Government Operations, 92d Cong., 1st sess., 1971.
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- J-7 Joint Economic Committee. The Acquisition of Weapons Systems (Part 4). Hearings before the Subcommittee on Priorities and Economy in Government, Joint Economic Committee, 92d Cong., 1st sess., 1971.
- J-8 Joint Economic Committee. The Acquisition of Weapons Systems (Part 5). Hearings before the Subcommittee on Priorities and Economy in Government, Joint Economic Committee, 92d Cong., 1st sess., 1971.
- J-9 Joint Economic Committee. The Acquisition of Weapons Systems (Part 6). Hearings before the Subcommittee on Priorities and Economy in Government, Joint Economic Committee, 92d Cong., 2d sess., 1972.
- J-10 Joint Economic Committee. The Acquisition of Weapons Systems (Part 7). Hearings before the Subcommittee on Priorities and Economy in Government, Joint Economic Committee, 93d Cong., 1st sess., 1973.
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- M-5 Government Contract Services, September 15, 1975, p. A3.

M-6 Letter from Senator Proxmire to Secretary Clark M. Clifford, July 18, 1968.

M-7 Letter from Senator Proxmire to Secretary Clark M. Clifford, October 10, 1968.

M-8 Letter from Representative Price to Dr. Bennett (Acting ASD(I&L)),  
November 9, 1975.

## INDEX OF STATEMENTS BY SUBJECT MATTER

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APPENDIX D

USE OF THE WEIGHTED GUIDELINES  
IN ESTABLISHING  
NEGOTIATION PROFIT OBJECTIVES

August 1976

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DD Form 1547  
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## I. INTRODUCTION

The profit policy of the Department of Defense (DoD) is implemented during the contracting process through the actions of government contract negotiators. As a part of their preparation for negotiation, negotiators develop pre-negotiation profit objectives based upon policy and guidance set forth in the Armed Services Procurement Regulation (ASPR) 3-808.

In support of the DoD study entitled "Profit '76," LMI analyzed how DoD negotiators have used the Weighted Guidelines (WGL) provisions of ASPR in establishing their pre-negotiation objectives. The analysis focused on the profit rates assigned to the so-called "above-the-line" cost factors (materials, labor, overhead, and general and administrative expense). These factors comprise the category "Cost Input to Total Performance (CITP)." Other factors, i.e., risk, performance, selected, and special, commonly referred to as "below-the-line," were not included in the analysis.

This report contains a summary analytic description of current profit policy as reflected in the WGL provisions of ASPR (Section II); a description of the data base developed by LMI for the analysis (Section III); and the results of the analysis (Section IV). Two primary conclusions, pertinent for consideration by the DoD Profit '76 Study Group, were drawn: They are presented in Section V.

## II. DESCRIPTION OF THE DOD WGL PROFIT POLICY

This Section (1) synthesizes the underlying rationale for the WGL approach, (2) summarizes DoD's profit policy as contained in ASPR, and (3) discusses some practical limitations in the application and analysis of the WGL.

### UNDERLYING RATIONALE

The basic rationale for the WGL and their application in DoD contracts first was presented in a 1963 study report, "Study of Profit or Fee Policy."<sup>1</sup> That Study led to the implementation of the WGL. The following is a synopsis of the rationale, as stated in the referenced report, for the relative profit weight ranges assigned to the various profit factors.

#### Lower Profit Rates (Weights) Should be Allowed for Direct Materials

- There is less contractor investment per sales dollar for purchased and subcontracted items than for items made in-house.
- The rate of capital turnover on investments in subcontracted and purchased items is more rapid than on in-house effort.
- The economic value added to the end product by subcontracted and purchased items is smaller than the value added by in-house effort.
- The profit rate applied to purchased and subcontracted items is not enough lower than the profit on in-house effort to outweigh the other reasonings behind a sound "make or buy" decision.

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<sup>1</sup>Logistics Management Institute, Study of Profit or Fee Policy, Task 62-14, January 1963.

Higher Profit Rates (Weights) Should  
be Allowed for Engineering Effort

- Engineering labor generally represents a greater investment in facilities and dollars for a substantially longer period of time than manufacturing.
- Engineering labor efforts represent a substantial investment in intangibles (e.g., design developments which provide a competitive advantage for manufactured items sold on the commercial market, and thus increased profits on the sales of production quantities). When DoD breaks out the production phase for price competition, the contractor cannot tie development to production to earn a profit on the composite.
- DoD is seeking state-of-the-art advancements which are dependent upon the availability of talent. As manufacturing is more readily available than research talent, simple supply and demand considerations make it logical to pay a higher profit for engineering.
- In contrast to engineering, manufacturing activity generates a large proportion of its total volume of business on the basis of competitive price considerations (where profit is not negotiated and the WGL's are not applicable).

In-House Cost Items Other  
than Engineering Labor

- No rationale was given for the ranges that were assigned to these factors.

We are not aware of any post-1964 studies which have measured either the effective relationship between the above-the-line profit weight ranges and contractors' management behavior, or have tested the validity of the rationale.



## CURRENT ASPR PROVISIONS

DoD's general contract profit policy is stated in ASPR 3-808.1 as follows:

"...to utilize profit to stimulate efficient contract performance...the aim of negotiation should be to employ the profit motive so as to impel effective contract performance by which overall costs are economically controlled...As an inducement for broad reduction in defense costs, the Government should establish a profit objective for contract negotiations which will:

- (i) reward the contractor who undertakes more difficult work requiring higher skills;
- (ii) allow the contractor an opportunity to earn profits commensurate with the extent of the cost risk he is willing to assume—the greater the risk assumption, the greater the profit objective established;
- (iii) reward those contractors who have an excellent record of past performance and conversely penalize those contractors whose performance has been poor; and
- (iv) reward contractors who provide their own facilities and financing or who have established their competence through prior development work undertaken at their own risk.

The weighted guidelines method set forth in 3-808.2 below for establishing profit objectives is designed to provide reasonably precise guidance in applying these principles. This method, properly applied, will tailor profits to the circumstances of each contract in such a way that long range cost reduction objectives will be fostered, and a wider spread of profits will be achieved." (Emphasis added.)

In ASPR 3-808.2, it is stated that:

"The weighted guidelines method provides contracting officers with (i) a technique that will insure consideration of the relative value of the appropriate profit factors described in 3-808.4 in the establishment of a profit objective and the conduct of negotiations; and (ii) a basis for documentation of this objective, including an explanation of any significant departure from this objective in reaching a final agreement..." (Emphasis added.)

The appropriate profit factors are set forth in ASPR 3-808.4, as shown on Figure 1.

The assignment of specific weights (values) to the profit factors for individual contract negotiation objectives is covered under ASPR 3-808.5. The salient guidance for the assignment of specific weights is summarized, by factor, in the following.

Direct Materials: Normally, the lowest weight is 2%. The weight assigned is to be based upon the level of managerial and technical effort expended to acquire the needed items.

FIGURE 1. WEIGHTED GUIDELINES

Profit Factors	Weight Ranges
<b>CONTRACTOR'S INPUT TO TOTAL PERFORMANCE</b>	
Direct Materials	
Purchased Parts -----	1 to 4%
Subcontracted Items -----	1 to 5%
Other Materials -----	1 to 4%
Engineering Labor -----	9 to 15%
Engineering Overhead -----	6 to 9%
Manufacturing Labor -----	5 to 9%
Manufacturing Overhead -----	4 to 7%
General and Administrative Expenses -----	6 to 8%
<b>CONTRACTOR'S ASSUMPTION OF CONTRACT</b>	
COST RISK -----	0 to 7%
Type of Contract	
Reasonableness of Cost Estimate	
Difficulty of Contract Task	
RECORD OF CONTRACTOR'S PERFORMANCE -----	-2 to +2%
Small Business Participation	
Management	
Cost Efficiency	
Reliability of Cost Estimates	
Value Engineering Accomplishments	
Timely Deliveries	
Quality of Product	
Inventive and Developmental Contributions	
Labor Surplus Area Participation	
SELECTED FACTORS -----	-2 to +2%
Source of Resources	
Government or Contractor Source of	
Financial and Material Resources	
Special Achievement	
Other	
SPECIAL PROFIT CONSIDERATION--See 3-808.6.	

Labor: The weight assigned is to be based on the quality, level, and diversity of talent, skills, and experience required, especially the amount of scarce talent and supervision needed.

Overhead and G & A: The weight assigned is to be based on the amount and level of personnel required, and the significance of the contribution (i.e., routine vs. special).

Risk: The weight assigned is to be based on the degree of cost responsibility assumed by the contractor (i.e., type of contract), the reliability of the cost estimate, and the chances for contractor success (i.e., the difficulty of the task).

Record of Contractor's Performance: This relates only to the division (or profit center) which will be performing the work. The factors which are to be considered are shown in Figure 1. In addition, the management factor considers competence and willingness to adjust company resources to meet peculiar, difficult, and changing defense requirements. The cost efficiency factor considers cost control, investment in plant modernization for improved efficiency, and make-or-buy program effectiveness.

Selected Factors: The weight assigned to the amount of government furnished facilities or financial assistance (other than normal progress payments) ranges from zero to minus 2%. For technical breakthrough or extraordinary fast delivery requirements, the range is from zero to plus 2%.

Special Profit Consideration: Per ASPR 3-808.6, military items developed at the contractor's risk (without government assistance) are given an added weight of 1 to 4%. On Foreign Military Sales procurements, a weight of 1 to 4% is added in recognition of any outstanding sales effort exerted and unusual risks assumed by the contractor.

### PRACTICAL LIMITATIONS

In the negotiation of cost reimbursement and fixed-price-incentive type contracts, the buyer and seller must reach agreement on both the total estimated cost and on the total dollar amount of the negotiated fixed- or target-fee, or profit. However, because of the substantially greater significance of the cost (approximately 90% of price) and the mandatory use of the DD Forms 633 which break down costs into the same cost elements as used in the WGL, cost negotiations normally focus on cost elements while profit negotiations focus only on total profit. Thus, separate profit objectives on the WGL elements, as required by the current ASPR policy, are meaningful only in establishing the Government's pre-negotiation profit objective. The effect of the ASPR profit policy is determined by how the DoD negotiators actually apply the policy in establishing their pre-negotiation profit objectives.



### III. THE DATA BASE

#### SOURCES OF PROFIT DATA

Profit data are available from three forms prepared by DoD contract negotiators:<sup>1</sup>

- DD Form 1547, Weighted Guidelines Profit/Fee Objective
- DD Form 1499, Report of Individual Contract Profit Plan
- DD Form 1500, Report of Contract Completion

The primary source for pre-negotiation profit objectives data is DD Form 1547. Negotiators prepare this form, prior to negotiation, in order to establish a profit objective in accordance with the WGL format set forth in ASPR 3-804.4. The Form 1547 becomes part of the contract file. However, it is not utilized in any formal data collection effort.

A secondary data source is DD Form 1499. It is prepared after the negotiation. Data on the profit objective, from the Form 1547, is included on the 1499, limited to the percentage profit objective only on the "below-the-line" elements of total estimated cost, risk, performance, selected factors, and special profit consideration.

A third source of data is DD Form 1500, "Report of Contract Completion." This form provides data only on the total initial dollar and percentage amount of profit, and the final earned profit.

In focusing on the use of WGL in establishing pre-negotiation profit objectives, the above-the-line profit factors are significant because this is how the CITP profit rate is justified. Analyses of both Form 1547 and Form 1499 data indicate that CITP represents approximately 60% of the total profit objective.

Data taken from the Forms 1499 and 1500 are cumulated by the DoD and reported each fiscal year by the DoD Comptroller.<sup>2</sup> The FY 75 report is considered a sufficient

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<sup>1</sup> A copy of each of the three forms is provided in Appendix A.

<sup>2</sup> DoD, Office of the Assistant Secretary of Defense (Comptroller), Profit Rates on Negotiated Prime Contracts, FY 1975, 3 February 1976.

source of "below-the-line" profit information. Above-the-line data are available only from the DD Form 1547.<sup>3</sup>

#### DATA BASE FOR ANALYSIS

Each of the Military Departments provided copies of their completed Forms 1547 on FY 75 pricing actions of over \$1 million. Of nearly 600 Forms 1547 provided, approximately 60 were eliminated for the following reasons:

- contract type not indicated
- commodity type not indicated
- profit \$ and % of cost could not be reconciled
- illegible data
- incomplete data
- small dollar values

A significant number of discrepancies in the Forms 1547 were corrected, as follows:

- Cost and profit dollar figures were checked for arithmetic accuracy. Where errors were observed, if the correct figures could be ascertained, correction was made; otherwise, the 1547 was deleted from the data base.
- Costs which clearly fit under one of the more definitive categories occasionally were carried in the "other costs" category. (For example, a major subcontract was listed under "other costs" in order to assign it a different profit weight than was assigned to "subcontracts" in general.) In such cases, the cost and profit dollars were transferred from "other costs" to the appropriate definitive cost category.
- The profit percentage rates listed on the Forms 1547 often inaccurately reflected the cost/profit relationship due to either arithmetic error or rounding. Because of this and the adjustments mentioned above, for each

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<sup>3</sup>Because profit objectives on major above-the-line cost elements are as significant as below-the-line profit factors, it would be worthwhile for DoD to collect, analyze and report the Form 1547 data on the same general basis as the Forms 1499 and 1500 data. Currently the DoD does not do so.

cost category on each Form 1547, the corrected profit dollars were divided by the corrected cost dollars and the result used in the data base.

This screening and correcting process netted 535 pricing actions (165 Army, 87 Navy, and 283 Air Force) completed in the period July 1, 1974 through December 31, 1975. These actions represent a total of \$6,181,881,564 cost (profit excluded) with an above-the-line profit of \$367,273,277 (profit on risk, performance, etc., excluded). The sample is distributed by contract type and commodity categories as shown in Table 1.

TABLE 1. DISTRIBUTION OF DATA BASE

<u>BY CONTRACT TYPE</u>	<u>No. of Actions</u>	<u>Cost (000s)</u>
Cost-Plus-Fixed-Fee	88	\$ 703,133
Cost-Plus-Incentive-Fee	78	1,775,498
Fixed-Price-Incentive	112	1,786,558
Firm-Fixed-Price	247	1,735,075
Fixed-Price-Escalation/Fixed-Price- Redeterminable	<u>10</u>	<u>181,617</u>
TOTALS	535	\$6,181,881
<u>BY COMMODITY</u>		
Aircraft & Aircraft Engines	146	\$2,694,606
Missiles & Space Systems	109	1,191,921
Ships	24	995,887
Vehicles	11	163,595
Weapons & Fire Control Systems	37	161,714
Ammunition	47	171,004
Electronics & Communications	133	742,869
Logistics Support Services	<u>28</u>	<u>60,285</u>
TOTALS	535	\$6,181,881

#### IV. ANALYSIS

The DD Form 1547 sample data base reveals median<sup>1</sup> profit of 5.95% on CIP, 3.25% on risk, 1.0% on performance, and minus 0.1% on all other factors, with a total profit of 9.8%. By comparison, the DoD Comptroller report for FY 1975, based upon DD Form 1499 data, shows median profit of 6.5% on CIP, 3.0% on risk, 0.2% on performance, and 0.0% (zero) on all other factors, with a total profit of 9.9%. The above-the-line factors (comprising CIP) account for 65% of total profit as reported by the Comptroller, and 60% of the total in the Form 1547 sample.

Thus, the data base developed for this analysis is considered to be a valid sample—one that can be used to examine how negotiators have used ASPR guidance in developing above-the-line profit objectives. Results of the analysis follow.

##### Profit Objectives Have a Narrow Range and are Skewed Toward the Top of the Range

The cost element profit objectives tend to be skewed toward the high end of the ASPR authorized ranges. Approximately 50% of the costs are assigned a profit in the third quartile of the authorized range. Further, approximately 70% of the costs in each category were assigned objectives within a one percent range. These distributions, along with the mean, median, and mode profit rate for each cost element are shown in Table 2. The distribution of cost by quartile for each cost category are shown in Figures 2 through 9.

##### Profit Objectives are Higher on the Lower Risk Types of Contracts

Above-the-line profit objectives are higher on cost reimbursement (CPFF & CPIF) contracts and lower on fixed price (FFP & FPI) contracts, as shown in Table 3. This is caused, in part, by the relative distribution of costs, shown in Table 4. Cost

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<sup>1</sup>The median developed by LMI on its sample data is weighted based upon cost as included, by element, in the Forms 1547. The Comptroller median is not cost weighted.



TABLE 2. DISTRIBUTION OF PROFIT ON COST BY FORM 1547 COST CATEGORY

Cost Category	ASPR Profit Range	Mean Profit Rate* (Weighted)	Median Profit Rate** (Cost Weighted)	Mode Profit Rate (% of Cost at this Rate)	Profit Rate Modal Range (% of Costs in this Range)	3rd Quartile of ASPR Profit Range (% of Costs in this Quartile)
Purchased Parts	1 - 4%	3.1%	3.2%	3.5%	2.5 - 3.5% (89%)	2.6 - 3.3% (43%)
Subcontracts	1 - 5	3.5	4.0	3.0	3.0 - 4.0 (63%)	3.0 - 3.9 (40%)
Other Material	1 - 4	2.9	2.5	2.5	2.0 - 3.0 (77%)	2.6 - 3.3 (25%)
Engineering Labor	9 - 15	12.1	12.0	12.0	12.0 - 13.0 (68%)	12.0 - 13.4 (68%)
Engineering O/H	6 - 9	7.5	7.5	7.5	7.0 - 8.0 (90%)	7.6 - 8.3 (24%)
Manufacturing Labor	5 - 9	7.5	7.5	8.0	7.0 - 8.0 (80%)	7.0 - 7.9 (40%)
Manufacturing O/H	4 - 7	5.9	6.0	5.5	5.5 - 6.5 (84%)	5.6 - 6.3 (48%)
Other Cost	N/A	5.6	5.9	N/A	3.0 - 7.0 (69%)	N/A
G & A	6 - 8	7.1	7.0	7.0	7.0 - 7.5 (88%)	7.0 - 7.4 (82%)
TOTAL	N/A	5.94%	5.95%	N/A	5.0 - 7.0 (70%)	N/A

\* Total Profit \$ ÷ total cost \$ for each cost category.

\*\*Half of the costs are assigned a profit rate equal to or above, and half are equal to or below this %.

# PURCHASED PARTS

ASPR Profit Range = 1-4%  
 ASPR Profit Mid-Point = 2.5%  
 Costs at ASPR Profit Mid-Point = 17.1%

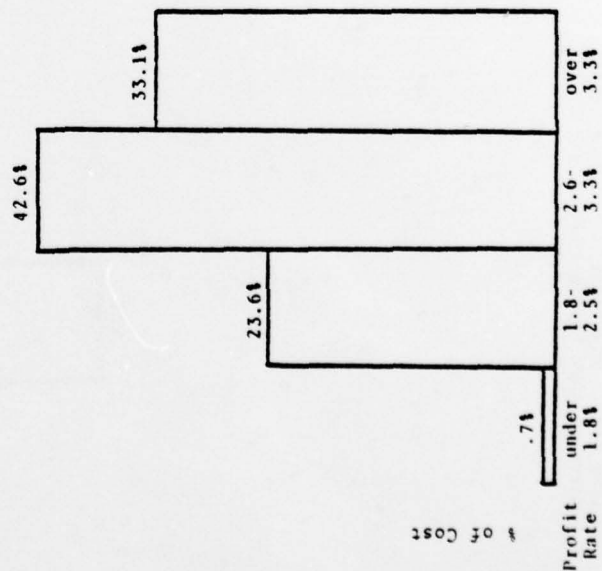


FIGURE 2

# SUBCONTRACTS

ASPR Profit Range = 1-5%  
 ASPR Profit Mid-Point = 3%  
 Costs at ASPR Profit Mid-Point = 30.2%

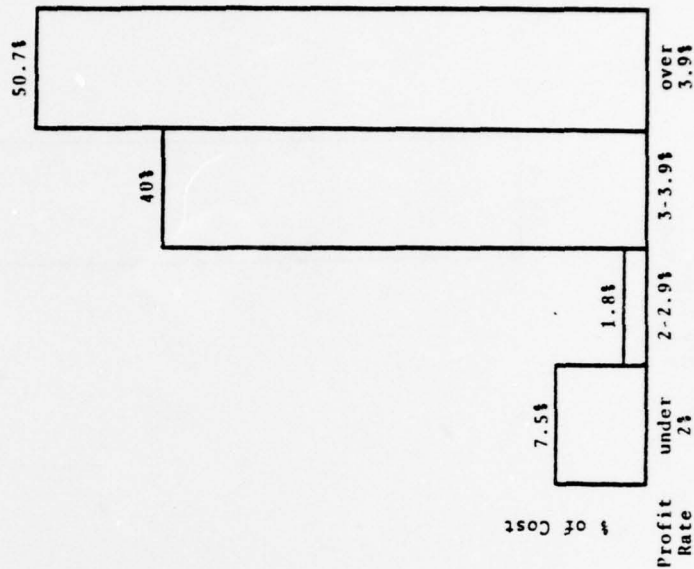
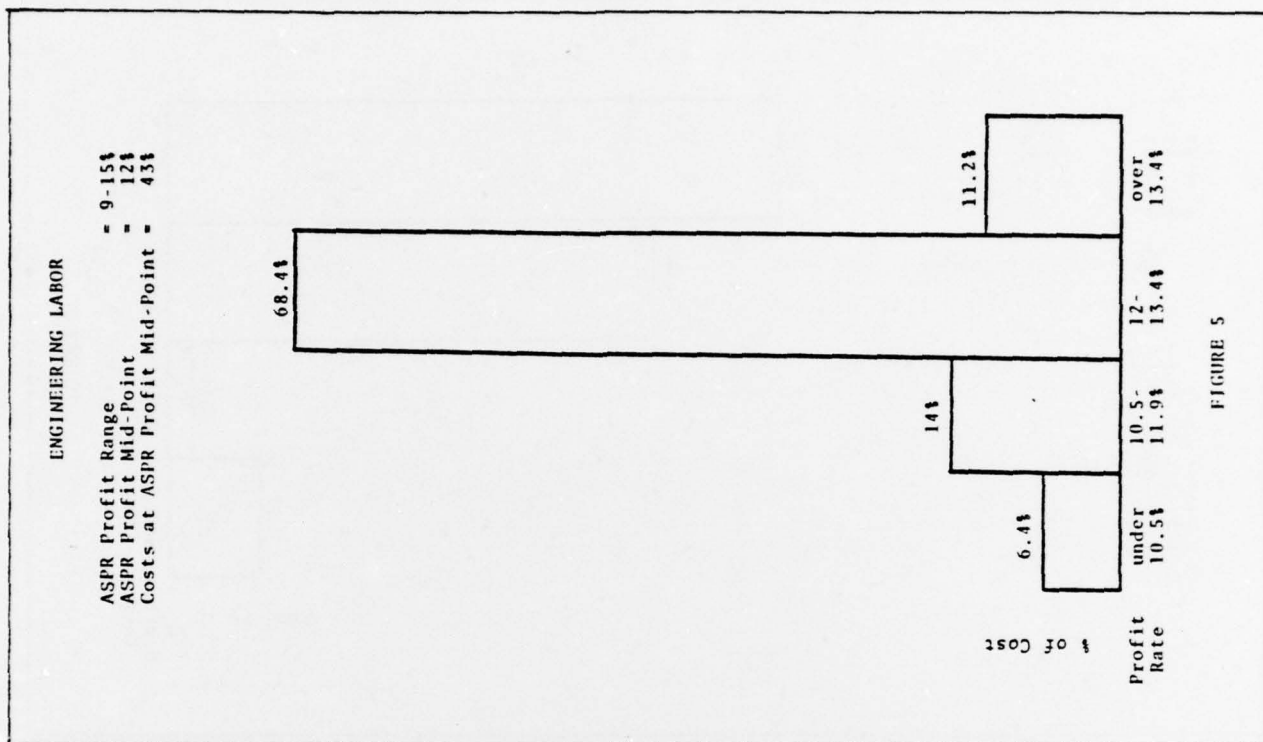
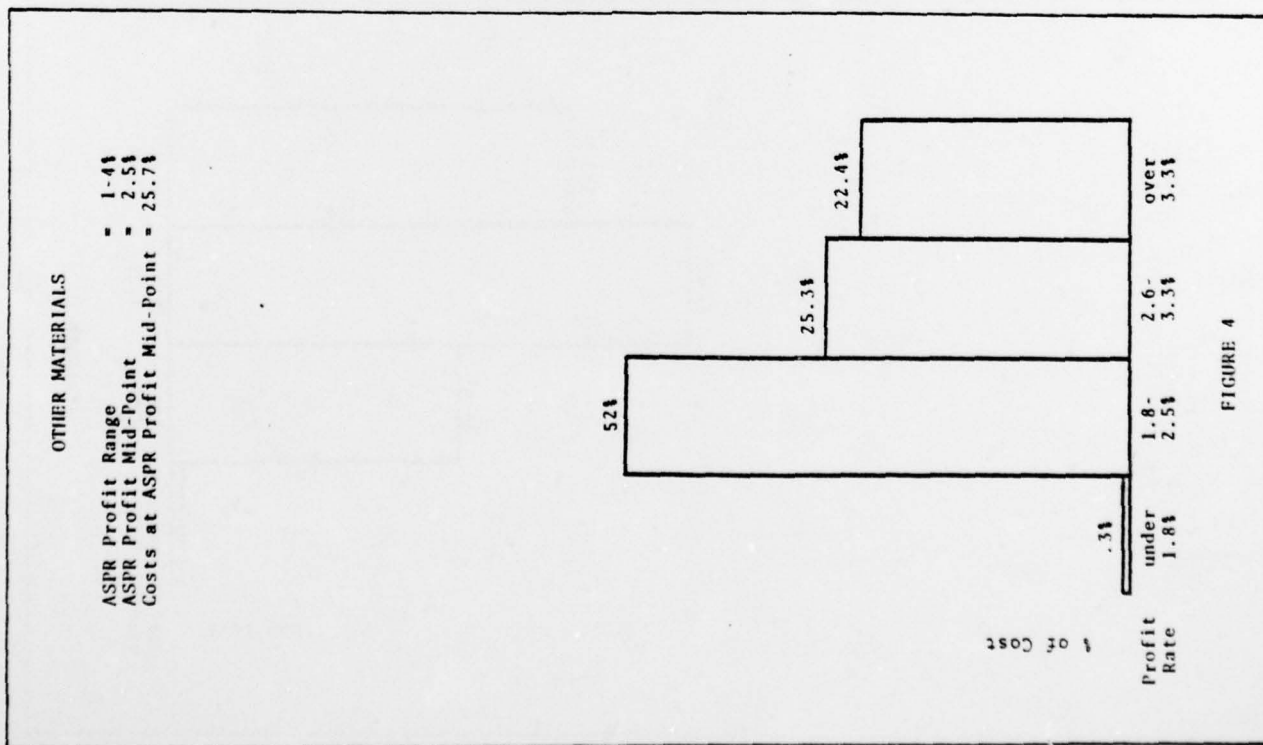


FIGURE 3



# ENGINEERING OVERHEAD

ASPR Profit Range = 6.9%  
 ASPR Profit Mid-Point = 7.5%  
 Costs at ASPR Profit Mid-Point = 42.9%

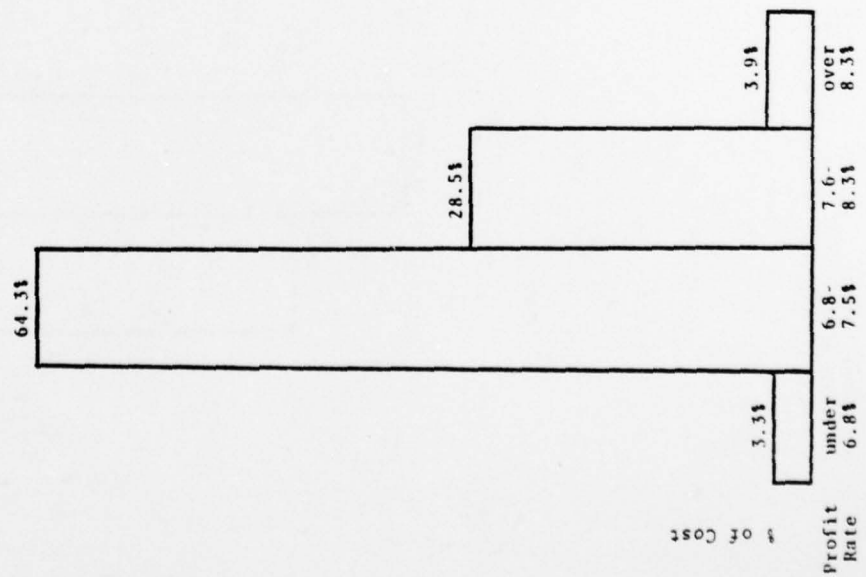


FIGURE 6

# MANUFACTURING LABOR

ASPR Profit Range = 5-9%  
 ASPR Profit Mid-Point = 7%  
 Costs at ASPR Profit Mid-Point = 18.2%

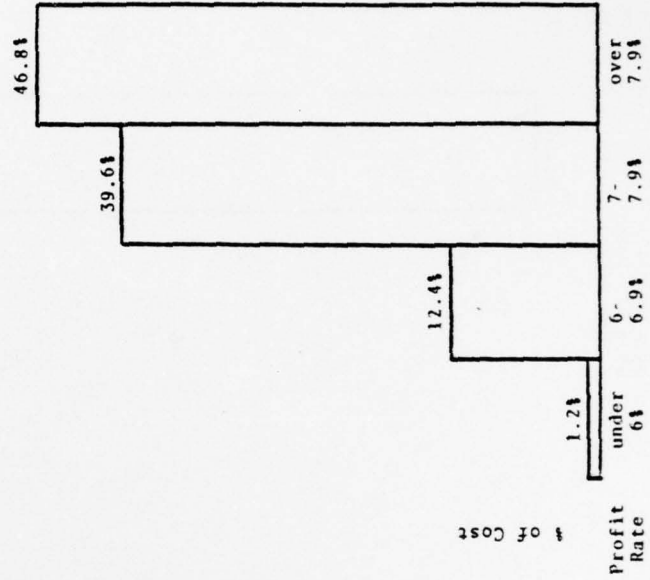


FIGURE 7



# MANUFACTURING OVERHEAD

ASPR Profit Range = 4-7%  
 ASPR Profit Mid-Point = 5.5%  
 Costs at ASPR Profit Mid-Point = 33.6%

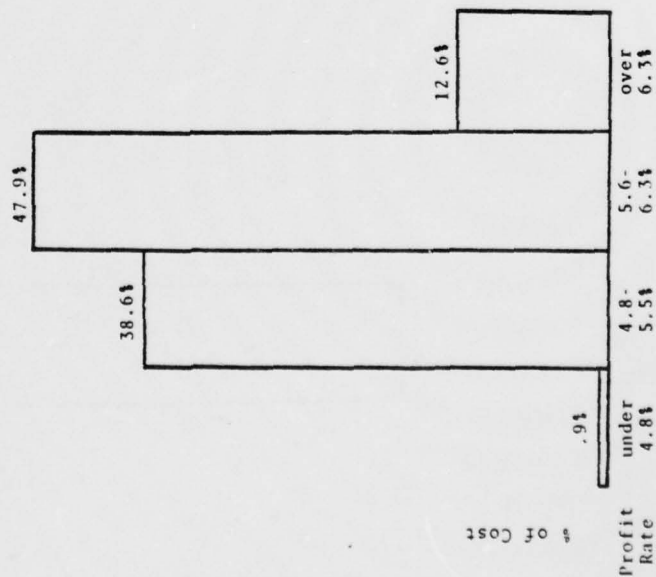


FIGURE 8

# G&A

ASPR Profit Range = 6-8%  
 ASPR Profit Mid-Point = 7%  
 Costs at ASPR Profit Mid-Point = 64.4%

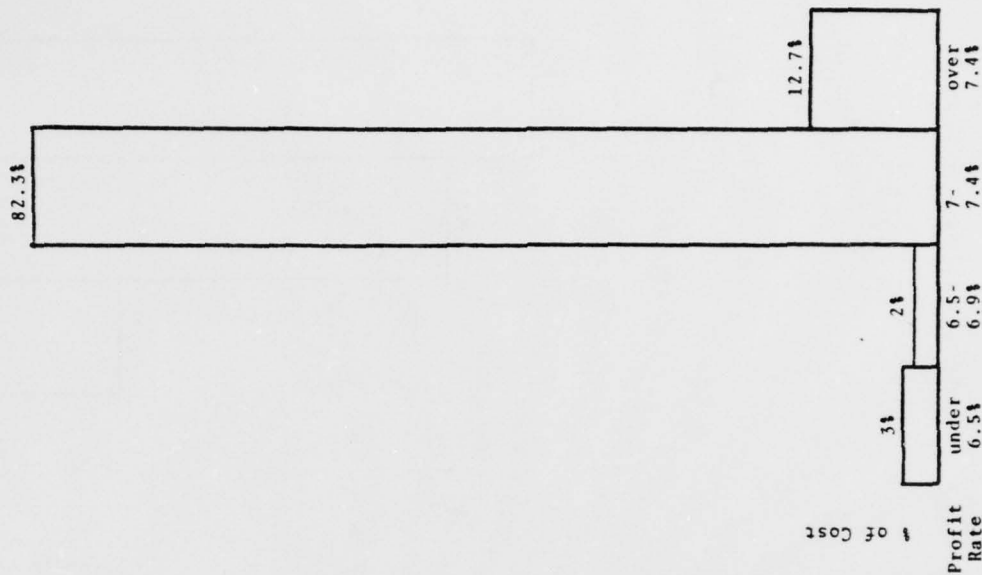


FIGURE 9

TABLE 3. DISTRIBUTION OF MEAN PROFIT RATES  
(WEIGHTED) BY COST CATEGORY AND CONTRACT TYPE

Cost Category	Contract Type				All Contracts
	CPFF	CPIF	FPI	FFP	
Purchased Parts	2.4%	3.0%	3.2%	3.1%	3.1%
Subcontracts	4.2	3.5	4.1	3.7	3.5
Other Materials	3.2	2.7	2.7	3.1	2.9
Engineering Labor	12.6	11.7	12.3	12.3	12.1
Engineering O/H	7.6	7.4	7.6	7.6	7.5
Manufacturing Labor	6.9	7.5	7.8	7.5	7.5
Manufacturing O/H	5.7	5.6	6.1	5.8	5.9
Other Costs	3.8	5.6	6.4	6.0	5.6
G & A	7.2	7.0	7.2	7.1	7.1
Total Cost	7.0%	6.4%	5.7%	5.3%	5.9%

TABLE 4. DISTRIBUTION OF COSTS BY COST CATEGORY  
AND CONTRACT TYPE

Cost Category	Contract Type				All Contracts
	CPFF	CPIF	FPI	FFP	
Purchased Parts	10.1%	7.3%	18.4%	22.4%	15%
Subcontracts	18.0	23.9	17.6	22.1	21
Other Materials	1.4	1.7	3.7	3.2	3
Total Direct Materials	29.5%	32.9%	39.7%	47.7%	39%
Engineering Labor	21.5%	15.9%	5.0%	3.9%	10%
Engineering O/H	18.8	14.9	4.9	4.8	9
Manufacturing Labor	12.1	10.0	17.0	10.9	12
Manufacturing O/H	3.0	10.2	18.4	16.7	14
Other Costs	7.5	6.9	6.6	6.5	7
G & A	7.6	9.2	8.4	9.5	9
Total Value Added	70.5%	67.1%	60.3%	52.3%	61%
Total Cost	100.0%	100.0%	100.0%	100.0%	100%

reimbursement contracts, common for R&D work, contain a higher proportion of engineering effort (which bears the highest profit weight). Fixed price contracts contain a higher proportion of purchased direct materials (which bear the lowest profit rate). Also, as cost recovery usually is faster under cost reimbursement contracts, the CITP profit rates will tend to provide a relatively higher return on investment on low risk contracts than on high risk contracts.

Profit Objectives Differ Significantly from  
the Mid-points of the ASPR Ranges

There is a significant difference between the mid-points of the ASPR range per cost category and the actual profit objectives. This is illustrated in Table 5. Column A shows an "average" contract, based on the total Form 1547 sample. Column C shows the relative amount of profit on total cost attributable to each cost category. Columns E and F show the comparative profits based on the mid-points of the ASPR authorized ranges. Were profit objectives clustered at the ASPR mid-points, profit would decrease about 0.33%.

Profit Objectives are Lower for Work that  
Requires the Most Investment

This is illustrated in Table 6, which compares the distribution of profit dollars by cost category for both the weighted mean profit weights derived from the Form 1547 data sample and the ASPR mid-point profit rates. Column F indicates that the pre-negotiation profit objectives provide more profit on purchased direct materials, which require little investment, than would result from applying the ASPR mid-point rates. On the other hand, for the value added by in-house work, which requires more contractor investment, the objectives provide less profit than the ASPR mid-points would yield.

TABLE 5. PROFILE OF TOTAL SAMPLE  
(AN "AVERAGE" CONTRACT WOULD LOOK LIKE THIS)

Cost Category	1547 % of Total Cost* (A)	1547 Weighted Mean Profit** (B)	1547 Weighted Mean Profit as a % of Total Cost (C) (A) x (B)	ASPR Mid-Point Profit % (D)	ASPR Mid-Point Profit as a % of Total Cost (E) (A) x (D)	1547 Deviation from ASPR Mid-Points (F) (C) - (E)
Purchased Parts	15%	3.1%	.46%	2.5%	.38%	+.08%
Subcontracts	21	3.5	.74	3	.63	+.11
Other Materials	3	2.9	.09	2.5	.08	+.01
Total Direct Materials	39%	N/A	1.29%	N/A	1.09%	+.20%
Engineering Labor	10%	12.1%	1.21%	12 %	1.20%	+.01%
Engineering O/H	9	7.5	.68	7.5	.68	.00
Manufacturing Labor	12	7.5	.90	7	.84	+.06
Manufacturing O/H	14	5.9	.83	5.5	.77	+.06
Other Costs	7	5.6	.39	N/A	.39***	.00
G & A	9	7.1	.64	7	.63	+.01
Total Value Added	61%	N/A	4.65%	N/A	4.51%	+.14%
Total Cost	100%	5.94%	5.94%	N/A	5.60%	+.34%

\*From Table 4. \*\*From Table 2.

\*\*\*No range prescribed in ASPR; mid-point assumed to be same as 1547 sample.



TABLE 6. DISTRIBUTION OF PROFIT DOLLARS BY COST CATEGORY

Cost Category	1547 % of Total Cost (A)	1547 Weighted Mean Profit as a % of Total Cost (B)	1547 % of Total Profit (C)	ASPR Mid-point Profit as a % of Total Cost (D)	ASPR Mid-Point % of Total Profit (E)	1547 Deviation from ASPR Mid-Points (F)
Purchased Parts	15%	.46%	7.74%	.38%	6.79%	+ .95%
Subcontracts	21	.74	12.46	.63	11.25	+1.21
Other Materials	3	.09	1.52	.08	1.43	+ .09
Total Direct Materials	39%	1.29%	21.72%	1.09%	19.47%	+2.25%
Engineering Labor	10%	1.21%	20.37%	1.20%	21.43%	-1.06%
Engineering O/H	9	.68	11.45	.68	12.14	- .69
Manufacturing Labor	12	.90	15.15	.84	15.00	+ .15
Manufacturing O/H	14	.83	13.97	.77	13.75	+ .22
Other Costs	7	.39	6.57	.39	6.96	- .39
G & A	9	.64	10.77	.63	11.25	- .48
Total Value Added	61%	4.65%	78.28%	4.51%	80.53%	-2.25%
Total Cost	100%	5.94%	100.00%	5.60%	100.00%	-0-

Col. A-From TABLE 4; B-From TABLE 5, Col. 3; C-Col. B ÷ 5.94% x 100; D-From TABLE 5, Col. 5;  
E-Col. D ÷ 5.60% x 100; F-Col. C minus Col. E

## V. CONCLUSIONS

Two major conclusions of significance to the Profit Policy Study Group emerged from this analysis, as follows:

- The WGL, in practice, give less profit weight to contractor investment than would result from merely using the mid-points of the authorized profit ranges.

The ASPR-authorized above-the-line profit weight ranges inherently provide higher profits on contracts which utilize higher amounts of contractor capital investment. This results from assignment of lower profit weight ranges to the costs of direct materials, which normally require relatively low investment, and higher profit weight ranges to the value-added cost elements (such as engineering), which normally require higher levels of investment. However, in establishing pre-negotiation objectives, the DoD negotiators put significantly more profit weight on direct material cost, and less on the value added costs, than would result from applying the ASPR-authorized profit range mid-points.

- DoD negotiators' pre-negotiation profit objectives on total above-the-line costs (CITP) are inverse to risk.

CITP profit objectives are higher for low risk cost reimbursement contracts and lower for high risk fixed-price contracts. This is a consequence of higher profit rates on engineering effort, most associated with research and development work performed under cost reimbursement contracts, and lower profit rates on materials cost, most associated with production effort under fixed-price contracts.

APPENDIX A

DD Form 1547, Weighted Guidelines  
Profit/Fee Objective

DD Form 1499, Report of Individual  
Contract Profit Plan

DD Form 1500, Report of Contract  
Competition

DD Form 1547: Weighted Guidelines Profit/Fee Objective

WEIGHTED GUIDELINES PROFIT/FEE OBJECTIVE				
INSTRUCTIONS: 1. See ASPR 3-806 for determination of assigned weight factors. 2. See ASPR 3-811 for documentation of profit objective.				
1. RFP/RFQ OR CONTRACT NO.	2. CONTRACTOR	3. CONTRACT TYPE		
4. COST INPUT TO TOTAL PERFORMANCE (ASPR 3-806.3(b))				
COST CATEGORY a	GOVERNMENT'S COST OBJECTIVE b	ASPR 3-806 WEIGHT RANGE	ASSIGNED WEIGHT c	WEIGHTED PROFIT/FEE (Cal a x c) d
DIRECT MATERIALS:				
PURCHASED PARTS		1% TO 4%	%	\$
SUBCONTRACTED ITEMS		1% TO 5%	%	\$
OTHER MATERIALS		1% TO 4%	%	\$
ENGR DIRECT LABOR		5% TO 15%	%	\$
ENGR OVERHEAD		6% TO 9%	%	\$
MFG DIRECT LABOR		5% TO 9%	%	\$
MFG OVERHEAD		4% TO 7%	%	\$
OTHER COSTS			%	\$
			%	\$
			%	\$
			%	\$
GENERAL AND ADMINISTRATIVE		4% TO 8%	%	\$
TOTAL	\$			\$
5. COMPOSITE PROFIT/FEE ON COST INPUT TO TOTAL PERFORMANCE (Cal a + Cal b)				PROFIT/FEE OBJECTIVE
6. COST RISK	ASPR 3-806.3(c)	0% TO 7%		%
7. PERFORMANCE	ASPR 3-806.3(d)	+2% TO +2%		%
8. SELECTED FACTORS	ASPR 3-806.3(e) & .7(f)	+2% TO +2%		%
9. SPECIAL PROFIT	ASPR 3-806.4 & .7(g)	0% TO +0%		%
10. COST-BASED PROFIT/FEE OBJECTIVE (Line 5 plus 9)				%
11. CONTRACT CAPITAL TURNOVER RATE			DD Form 1061	X
12. CONTRACT CAPITAL INDEX			ASPR 3-806.7(i)	%
13. CAPITAL-ADJUSTED PROFIT OBJECTIVE			Line 12 + 20% of Line 10	%
14. SPECIAL PROFIT (Replace line 9 if applicable)			ASPR 3-806.7(j)	%
15. TOTAL PROFIT OBJECTIVE			(Line 13 + Line 14)	%
DATE	PREPARED BY	SIGNATURE		

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*DD Form 1499: Report of Individual Contract Profit Plan*

REPORT OF INDIVIDUAL CONTRACT PROFIT PLAN						DEPARTMENT	
1. REPORT NUMBER		2. CONTRACT NUMBER				3. ACTION	
		a. DEPT	b. ACTIVITY	c. FY	d. SERIAL NO.	e. YEAR f. MO	MONTH
4. PURCHASING OFFICE NAME						ITEM 4 CODE	
5. TYPE OF ACTION A. INITIAL AWARD B. SUBSEQUENT NEGOTIATION OF COST/PROFIT					5a. ORDER/MOD NO.		ITEM 5 CODE
6. CONTRACTOR IDENTIFICATION a. COMPANY NAME b. DIVISION NAME (If applicable)						ITEM 6 CODE	
7. PRINCIPAL PLACE OF PERFORMANCE (City-State)						ITEM 7 CODE CITY STATE	
8. FEDERAL SUPPLY CLASS OR SERVICE CODE						ITEM 8 CODE	
9. DEPARTMENT OF DEFENSE CLAIMANT PROGRAM NUMBER						ITEM 9 CODE	
10. TYPE OF CONTRACT (ASPR Section III, Part 4) A. FIXED PRICE REDETERMINATION J. FIRM FIXED PRICE K. FIXED PRICE ESCALATION L. FIXED PRICE INCENTIVE (All types) R. COST PLUS AWARD FEE U. COST PLUS FIXED FEE V. COST PLUS INCENTIVE FEE						ITEM 10 CODE	
11. WEIGHTED GUIDELINES (ASPR 2-406) (If weighted guidelines are not used, omit a through e and make entry if 1 only)							
a. COST INPUT TO TOTAL PERFORMANCE						DD Form 1547, Line 5	%
b. COST RISK						Line 6	%
c. PERFORMANCE						Line 7	%
d. SELECTED FACTORS						Line 8	%
e. SPECIAL PROFIT FACTOR						Line 9	%
f. COST-BASED PROFIT/FEE OBJECTIVE (Sum of a through e, if applicable)						Line 10	%
12. CONTRACT CAPITAL EMPLOYED (Use Section 12 only if capital employed method is applicable)							
a. COMPOSITION							
(1) OPERATING						DD Form 1547, Line 7	\$
(2) LAND						Line 8(a)	\$
(3) BUILDINGS						Line 8(b)	\$
(4) EQUIPMENT						Line 8(c)	\$
(5) TOTAL CAPITAL EMPLOYED						Line 8	\$
b. CONTRACT CAPITAL TURNOVER RATE						DD Form 1547, Line 11	X
c. SPECIAL PROFIT FACTOR						Line 14	%
d. TOTAL PROFIT OBJECTIVE						Line 15	%
13. CONTRACTOR'S PROPOSED PROFIT OR FEE OBJECTIVE							
14. ESTIMATED AMOUNTS NEGOTIATED							
a. TARGET OR COST (To nearest dollar - omit cents)						\$	
b. PROFIT OR FEE (To nearest dollar - omit cents)						\$	
c. PROFIT OR FEE AS A PCT. OF COST (14b - 14a)						%	
d. PROFIT OR FEE AS A PCT. OF CAPITAL (14b + 12a(5))						%	
e. PROFIT FOR ADDITIONAL CONTRACTOR INVESTMENT						\$	
NOTE: (1) Show all percentages to nearest tenth of a percent. (2) Indicate all negative amounts by a minus (-) sign before entry.							
15. DATE SUBMITTED		16. TYPED NAME AND SIGNATURE OF PROCURING CONTRACTING OFFICER OR REPRESENTATIVE				17. TELEPHONE NUMBER	

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1 SEP 73

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# DD Form 1500: Report of Contract Completion

REPORT OF CONTRACT COMPLETION <small>(Show dollar amounts in nearest dollar - last cents. Show percentages to the nearest tenth of a percent.)</small>						DEPARTMENT	REPORT CONTROL SYMBOL		
1. REPORT NUMBER		2. CONTRACT NUMBER		3. AWARD DATE		YEAR	MONTH		
				4. COMPLETION DATE		YEAR	MONTH		
5. PURCHASING OFFICE NAME						ITEM 5 CODE			
6. CONTRACTOR IDENTIFICATION						ITEM 6 CODE			
a. COMPANY NAME									
b. DIVISION (if applicable)									
7. PRINCIPAL PLACE OF PERFORMANCE (City - State)						ITEM 7 CODE			
						CITY	STATE		
8. FEDERAL SUPPLY CLASS OR SERVICE CODE						ITEM 8 CODE			
9. DEPARTMENT OF DEFENSE CLAIMANT PROGRAM NUMBER						ITEM 9 CODE			
10. TYPE OF CONTRACT (ASPR Section III, Part 4)						ITEM 10 CODE			
A. FIXED PRICE REDEMPTION (All types)						R. COST PLUS AWARD FEE			
L. FIXED PRICE INCENTIVE (All types)						U. COST PLUS FIXED FEE			
						V. COST PLUS INCENTIVE FEE			
11. CONTRACT COST									
a. INITIALLY NEGOTIATED TARGET OR COST						\$			
b. ADJUSTMENTS NEGOTIATED TO CHANGE SCOPE OF CONTRACT (If due to a net reduction of a., indicate by a minus sign before amount)						\$			
c. OVERRUN OR UNDERRUN (Overrun is excess of final cost over a. plus b. (Underrun indicates that final cost is less than a. plus b. If underrun, indicate by a minus sign before amount.)						\$			
d. FINAL COST (Sum of a + b + c)						\$			
12. CONTRACT PROFIT OR FEE (Indicate penalty by minus sign before amount)									
a. INITIALLY NEGOTIATED PROFIT OR FEE						\$			
b. ADJUSTMENTS BECAUSE OF CHANGE IN SCOPE OF CONTRACT (If net reduction of a., indicate by a minus sign before amount)						\$			
c. COST INCENTIVE EARNINGS OR PENALTY						\$			
d. PERFORMANCE INCENTIVE EARNINGS OR PENALTY						\$			
e. SCHEDULE INCENTIVE EARNINGS OR PENALTY						\$			
f. VALUE ENGINEERING EARNINGS						\$			
g. FINAL PROFIT OR FEE (Sum of a + b + c + d + e + f. (Use minus sign for loss.)						\$			
13. PROFIT OR FEE PERCENTAGES									
a. INITIALLY NEGOTIATED PROFIT OR FEE RATE ((g + 100) / 100)						%			
b. FINAL PROFIT OR FEE RATE ((g + 100) / 100)						%			
14. REMARKS									
15. DATE SUBMITTED			16. TYPED NAME AND SIGNATURE OF ADMINISTRATIVE CONTRACTING OFFICER OR REPRESENTATIVE AND NAME OF OFFICE				17. TELEPHONE NO.		
15a. DATE SUBMITTED			15a. TYPED NAME AND SIGNATURE OF PROCURING CONTRACTING OFFICER OR REPRESENTATIVE				17a. TELEPHONE NO.		

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) LMI's technical support to the Profit Study Group, Profit '76, Office of Assistant Secretary of Defense (I&L) is synopsized. Four Appendixes, prepared by LMI during the Profit '76 Study, are included. They are: An Annotated Bibliography of Profit Studies; Digest: Tax Reform Hearings on Capital Formation; Defense Profits and Profit Studies; Congressional Criticisms and Concerns; and Use of the Weighted Guidelines in Establishing Negotiation Profit Objectives.		

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